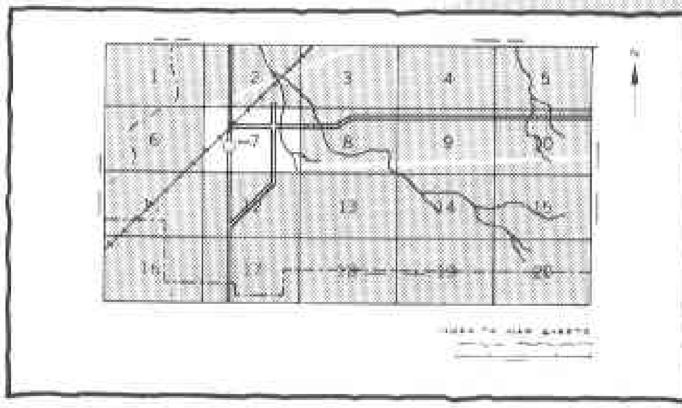
SOIL SURVEY OF

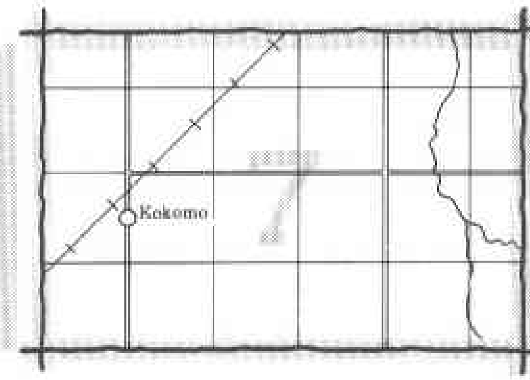
Lafayette Parish, Louisiana

United States Department of Agriculture
Soil Conservation Service
in cooperation with
Louisiana Agricultural Experiment Station

HOW TO USE

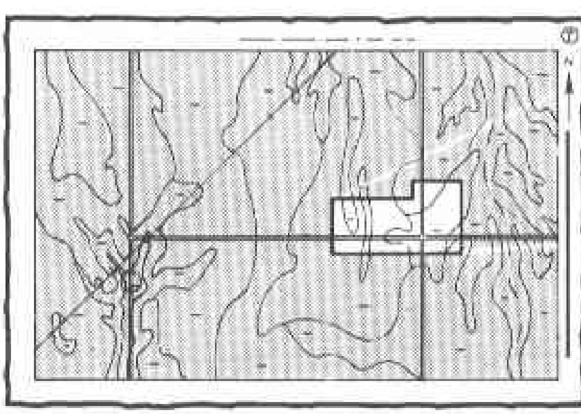
1. Locate your area of interest on the "Index to Map Sheets" (the last page of this publication).

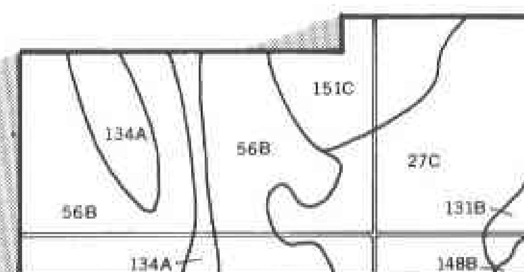




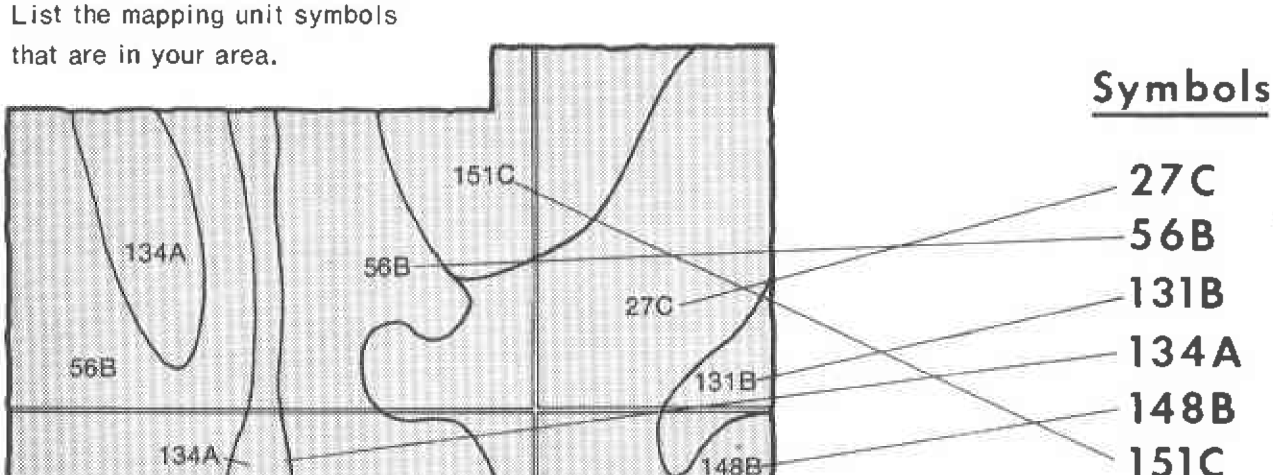
2. Note the number of the map sheet and turn to that sheet.

3. Locate your area of interest on the map sheet.



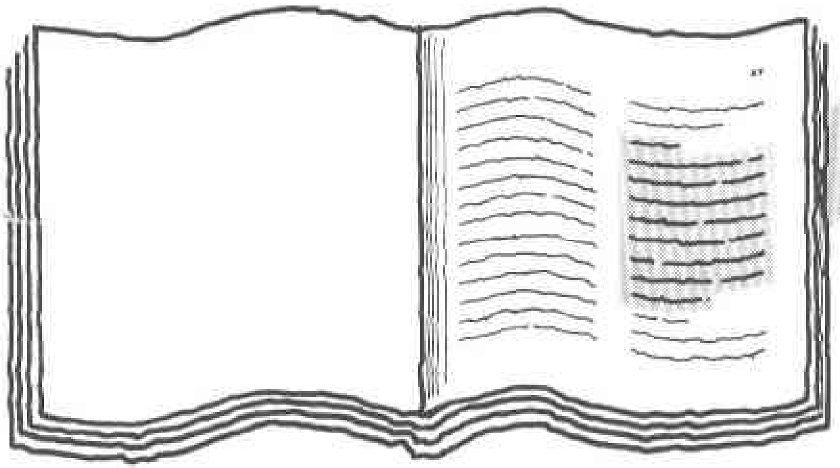


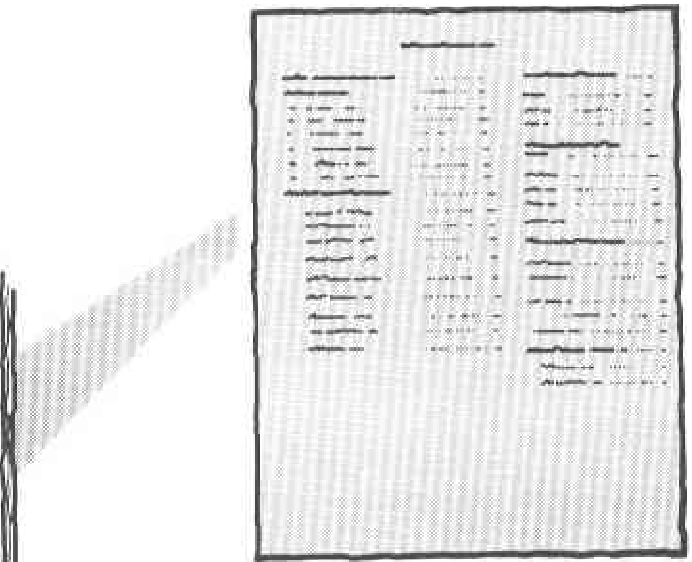
4. List the mapping unit symbols that are in your area.



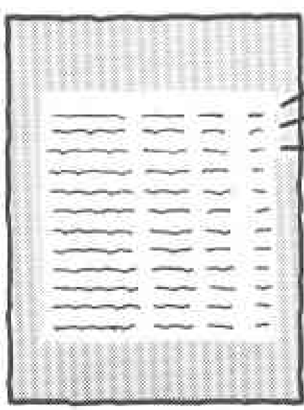
THIS SOIL SURVEY

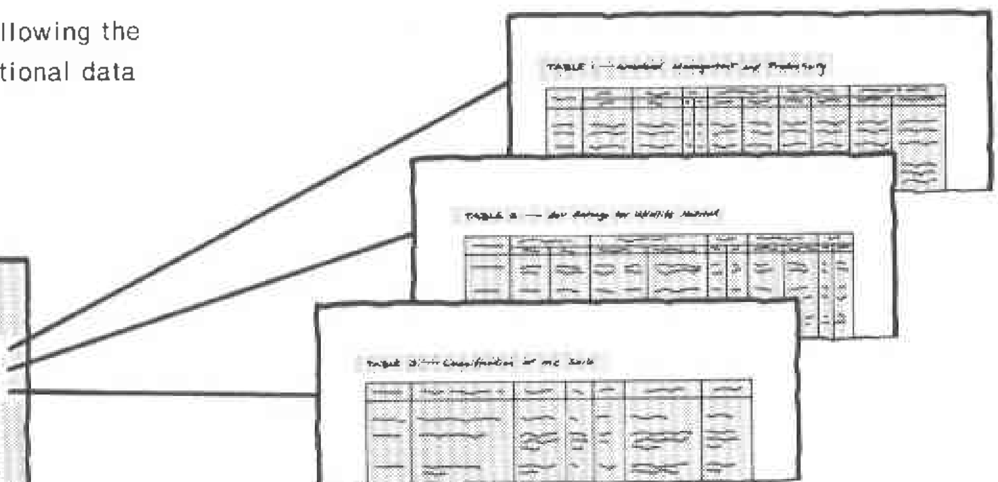
5. Turn to "Index to Soil Mapping Units" which lists the name of each mapping unit and the page where that mapping unit is described.





6. See "Summary of Tables" (following the Contents) for location of additional data on a specific soil use.





7. Consult "Contents" for parts of the publication that will meet your specific needs. This survey contains useful information for farmers or ranchers, foresters or agronomists; for planners, community decision makers, engineers, developers, builders, or homebuyers; for conservationists, recreationists, teachers, or students; for specialists in wildlife management, waste disposal, or pollution control.

This is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and agencies of the States, usually the Agricultural Experiment Stations. In some surveys, other Federal and local agencies also contribute. The Soil Conservation Service has leadership for the Federal part of the National Cooperative Soil Survey. In line with Department of Agriculture policies, benefits of this program are available to all, regardless of race, color, national origin, sex, religion, marital status, or age.

Major fieldwork for this soil survey was completed in the period 1974-76. Soil names and descriptions were approved in 1976. Unless otherwise indicated, statements in the publication refer to conditions in the survey area in 1976. This survey was made cooperatively by the Soil Conservation Service and the Louisiana Agricultural Experiment Station. It is part of the technical assistance furnished to the Lafayette Soil and Water Conservation District.

Soil maps in this survey may be copied without permission, but any enlargement of these maps could cause misunderstanding of the detail of mapping and result in erroneous interpretations. Enlarged maps do not show small areas of contrasting soils that could have been shown at a larger mapping scale.

Cover: Old home on Memphis silt loam, 0 to 1 percent slopes. Most early homes were built on this soil, which occupies some of the highest elevations in the parish.

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Issued August 1977

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Foreword

The Soil Survey of Lafayette Parish, Louisiana contains much information useful in any land-planning program. Of prime importance are the predictions of soil behavior for selected land uses. Also highlighted are limitations or hazards to land uses that are inherent in the soil, improvements needed to overcome these limitations, and the impact that selected land uses will have on the environment.

This soil survey has been prepared for many different users. Farmers, ranchers, foresters, and agronomists can use it to determine the potential of the soil and the management practices required for food and fiber production. Planners, community officials, engineers, developers, builders, and homebuyers can use it to plan land use, select sites for construction, develop soil resources, or identify any special practices that may be needed to insure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the soil survey to help them understand, protect, and enhance the environment.

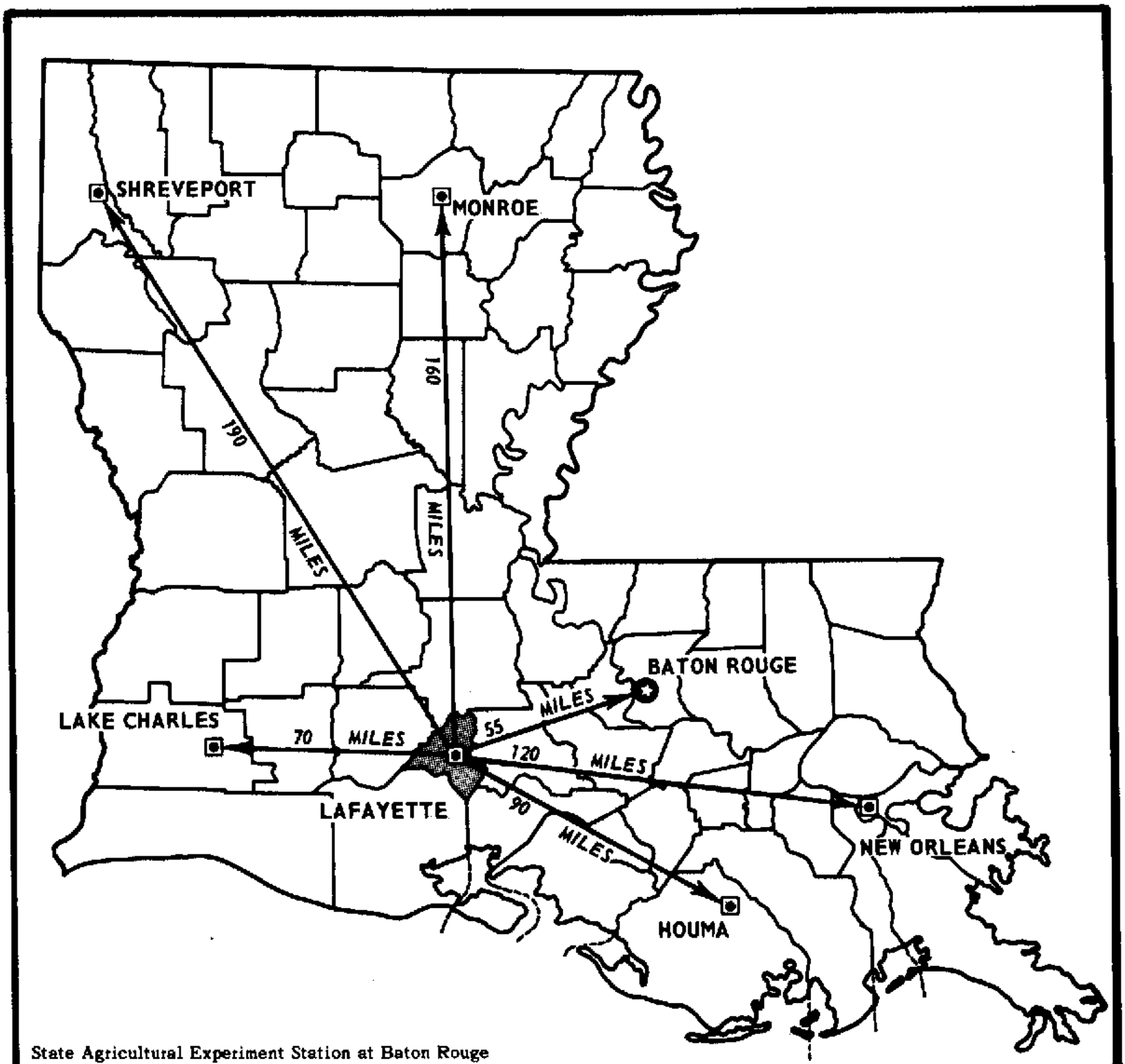
Many people assume that soils are all more or less alike. They are unaware that great differences in soil properties can occur even within short distances. Soils may be seasonally wet or subject to flooding. They may be too unstable to be used as a foundation for buildings or roads. Very clayey or wet soils are poorly suited to septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. Broad areas of soils are shown on the general soil map; the location of each kind of soil is shown on detailed soil maps. Each kind of soil in the survey area is described, and much information is given about each soil for specific uses. Additional information or assistance in using this publication can be obtained from the local office of the Soil Conservation Service.

We believe that this soil survey can help bring us a better environment and a better life. Its widespread use can greatly assist us in the conservation, development, and productive use of our soil, water, and other resources.

Alton Mangum

Alton Magnum
State Conservationist
Soil Conservation Service



Location of Lafayette Parish in Louisiana.

SOIL SURVEY OF LAFAYETTE PARISH, LOUISIANA

By Kenneth E. Murphy, Jerry J. Daigle, and Larry J. Roetker

United States Department of Agriculture, Soil Conservation Service, in cooperation with Louisiana Agricultural Experiment Station

LAFAYETTE PARISH is in south-central Louisiana, about 50 miles west of Baton Rouge (see map on facing page). The total land area of the parish is 181,120 acres. The population in 1970 was 111,745. Lafayette, with a population of 70,946, is the largest city and parish seat. About 72 percent of the population is urban, and the remainder is rural. The significant trend in land use is from agricultural to urban use; this change is occurring mostly in the area immediately to the south and west of Lafayette.

The parish is made up of two general areas: the terrace upland and the Mississippi River Alluvial Plain. Elevations range from about 60 feet above sea level on the terrace upland in the northern part of the parish to less than 10 feet above sea level on the alluvial plain in the extreme east-central part.

General nature of the parish

In this section, general information concerning the parish is given. Agriculture, climate, landforms and surface geology, history and development, industry and commerce, transportation, and water resources are discussed.

Agriculture

Lafayette Parish is both an agricultural and an urban parish. Originally, its economy as well as that of the city of Lafayette depended upon the production of sugarcane and cotton. Agriculture is still an important source of income; in recent years, however, the oil and gas industries have been the leading factors in the economic growth of the parish.

In 1972, according to the Lafayette Regional Planning Commission, in "Land Use Inventory," approximately 77 percent of the total land area in the parish was devoted to some type of agriculture (*15*). The principal crops are soybeans, rice, and sugarcane. The 1975 annual report of the Louisiana Cooperative Extension Service indicates that soybeans were planted on 13,500 acres; rice, on 12,000 acres; and sugarcane, on 8,000 acres. In 1975, the major crops in order of cash value were rice, sugarcane, horticultural crops, soybeans, okra, and sweet potatoes. Other crops grown in the parish are peppers, cotton, and corn. The estimated gross value of all agricultural products in 1975 was more than 20 million dollars.

The acreage in cotton and sweet potatoes has decreased significantly during the past 30 years. These crops have been replaced by rice and soybeans. Lafayette Parish at one time was one of the most intensively cultivated parishes in the state; today, however, the cultivated acreage is decreasing rapidly primarily because of urban expansion. This trend is expected to continue throughout this century because the population of the parish is projected to more than double by the year 2000.

Climate

BY DR. ROBERT A. MULLER, Department of Geography and Anthropology, Louisiana State University.

Lafayette Parish is part of a broad region of the southeastern United States that has a humid subtropical climate. The parish is dominated by warm, moist, tropical air from the nearby Gulf of Mexico. This maritime tropical air is displaced frequently during winter and spring by incursions of continental polar air from Canada, but these polar outbreaks usually last no longer than 3 to 4 days. The incursions of cold air occur less frequently during autumn and only rarely during summer.

The frontal boundary that separates polar and tropical air also separates contrasting weather. North of a cold front after its passage during winter, the sky is typically covered by low clouds driven by strong, gusty, northerly winds; temperatures fall into the forties; and intermittent drizzle falls. Within 24 hours, the sky usually clears, the winds abate, and temperatures overnight may fall low enough to produce frost or freeze conditions. Balmy conditions reign in the tropical air to the south of the cold front. In January, air temperatures reach the upper sixties to mid seventies, and sunshine is interrupted by billowy cumulus clouds swept toward the north within the moisture-laden air from the Gulf. Temperature data for the parish are given in table 1.

Temperatures near the top of a dense stand of crops or vegetation are somewhat higher during sunny days, and colder during clear, calm nights. Some small temperature variation in the parish is associated with slopes, drainage, and proximity to bodies of water.

Table 2 shows probability estimates of the last dates of selected freezing temperatures in spring and the first dates in fall for Lafayette. During the 30-year period, extremely low temperatures damaging to subtropical crops and vegetation have occurred. At Lafayette, the absolute minimum during that period was 12 degrees, but bitter polar outbreaks are relatively rare. For the 30-year period between 1941 and 1970 at Baton Rouge, for example, daily minimum temperatures fell to 16 degrees or below only 12 times, eight times during the very cold winters of 1962 through 1966 (*6*).

Precipitation is usually associated with the passage of warm and cold fronts over the parish. Heavy showers, lasting usually no more than an hour or 2, occur within vigorous squall lines ahead of cold fronts during winter and spring. General rains of 12 to 24 hours are relatively uncommon. During summer, precipitation usually falls during brief, heavy showers and thunderstorms between noon and early evening. Each shower covers a very small area, and the soil moisture conditions often vary widely during summer and autumn. Heavy showers and more general rains occasionally occur in late summer and autumn in conjunction with the passage of tropical disturbances and hurricanes from the Gulf. Monthly precipitation data for Lafayette are also given in table 1 (*11*).

Rainstorms that produce local flooding and excessive soil moisture conditions occur occasionally. At Baton Rouge, the maximum daily rainfall of record is almost 12 inches, and a daily rainfall of 5 inches or more recurs about once every 5 years. Such rainfall often occurs along stationary fronts in winter and spring or in association with a tropical disturbance in fall.

The climate of Lafayette Parish is outstanding for crops adapted to the subtropical climate and the local drainage conditions. In most years, there is ample sunshine, warm but not excessive temperature, a long frost-free season, abundant precipitation that includes no really significant snowfall, high atmospheric humidity, and infrequent damaging winds.

In Lafayette Parish, as in many climatic regions, climatic hazards are mostly infrequent, extreme events that can be expecially damaging. Extremely severe weather conditions associated with thunderstorms, squall lines, and hurricanes do occur, but any one location is rarely damaged seriously more than once. These extreme conditions include hailstorms and tornadoes, which occur very infrequently during severe thunderstorms, as well as tropical storms and hurricanes, which affect the parish perhaps 3 years in 10. These storms in late summer and in autumn usually bring only cloudy, windy, and rainy weather to the parish. Severe hurricanes causing widespread wind damage will probably strike only once in 2 or 3 decades.

Despite the high average rainfall, monthly and seasonal variation of precipitation is great enough to result in short-term droughts and wet spells which affect agricultural operations and crop yields. The water-budget methodology is a useful system for organization and inventory of relationships between climate, land use, and agriculture. Figure 1 is a graphical representation of some of the water-budget components calculated on a monthly basis from data taken at Ryan Airport in Baton Rouge, about 55 miles east-northeast of the center of Lafayette Parish; the data for Baton Rouge are reasonably representative of water-budget components in Lafayette Parish.

Potential evapotranspiration, or PE, is represented by the upper continuous curve on the graph, and it is defined as the maximum amount of evapotranspiration which would take place in an area that has a continuous vegetative cover and no shortage of soil moisture. The monthly estimates of PE depend on energy supplied to the interface, particularly by solar radiation. In the Thornthwaite system used in this analysis, these estimates are based primarily on air temperature and day length. The seasonal regime of PE is low in winter, high in summer, and relatively little variation from one year to the next.

Actual Evapotranspiration, or AE, represents calculated estimates of evaporation and transpiration together; AE, therefore, is an index of water use and plant production. Monthly AE cannot be greater than monthly PE, but when AE is less than PE, the graph shows the moisture deficit (D), which is an index of water shortage or of the need for irrigation to maximize plant production. The calculations assume a 6-inch moisture storage capacity available to the vegetation within the root zone. The deficits throughout the parish are greater when young plants have shallow roots; deficits are smaller where rooting depths are deeper and in poorly drained back swamp areas.

The graph also shows the moisture surplus (S), which represents precipitation not lost in evapotranspiration or used for soil moisture recharge. The surplus, therefore, becomes either surface runoff or groundwater recharge. The strong seasonality of the surplus—maximum in winter and spring and only occasional in summer and fall—and the very large month-by-month variation are indicated. The graph also illustrates the tendency for clustering of wetter or drier months, seasons, or years. This variability and clustering has considerable impact on agricultural activities; note especially the large surpluses during 1961 followed by the large deficits during 1962 and the first half of 1963.

Figure 2 shows monthly deficits and surpluses summed on a seasonal basis for the standard 30-year climatic period for Lafayette. Surpluses can be expected each winter and spring and occasionally in fall, but only rarely in summer. Deficits can be expected each summer and during fall in most years, but only occasionally during spring. This figure illustrates again the variability by seasons through the years and the tendency for clustering. Note, for example, the smaller than average winter surpluses of moisture during the late forties and in the fifties and sixties; the large spring surpluses during the late forties; and the large summer deficits during much of the forties (*18*).

Landforms and surface geology

By Dr. Bobby J. Miller, Department of Agronomy, Agricultural Experiment Station, Louisiana State University.

Physiographically, Lafayette Parish consists of two general areas: the Mississippi River Alluvial Plain, which occupies a narrow band along the eastern edge of the parish, and the terrace upland, which makes up about 90 percent of the parish and characterizes the entire area west of the Mississippi River Alluvial Plain. The two areas are separated by an abrupt escarpment that rises 15 to 40 feet from the western edge of the alluvial plain to the level of the terrace upland (fig. 3). Each of these two areas consists of one or more subareas, which can be distinguished by differences in either physiographic features and soil parent materials, or both.

The surface features of the land and the nature and distribution of the different sediments in which the soils have formed are a result of events during and since the late Pleistocene epoch. The major surface features, geologic nature, and relative ages of these areas are discussed in the following paragraphs.

Terrace upland

The terrace upland makes up the area west of the escarpment of the Mississippi River Alluvial Plain. The area is comprised largely of loess-covered alluvial deposits. Alluvial deposits at and near the surface in this area are generally part of the Prairie Formation, which was deposited during late Pleistocene time. In Lafayette Parish, the Prairie Formation is comprised largely of Red River alluvium in the western part and Mississippi River alluvium in the eastern part (*3*, *12*, *21*). Recent work by Saucier (*21*) places the time of deposition of these sediments at between 80,000 and 100,000 years ago. Most of the soils in the area developed in the more recent loess deposits; less than 5 percent of the soils in the parish developed in the older deposits of the Prairie Formation. These two materials, together with sediments derived from them and deposited locally, are the parent materials for all the soils on the terrace upland.

Elevations in the area range from a little more than 60 feet in the northeastern corner of the parish to less than 25 feet along the southern edge. The general slope of the area is to the southwest, and local relief is typically less than 5 feet except along stream channels and the escarpment to the lower lying Mississippi River Alluvial Plain. In parts of the parish, the escarpment has local relief of more than 40 feet (*12*).

Within the terrace upland, two distinct subareas can be recognized on the basis of topographic features and soil distribution patterns. They extend the full length of the parish and divide it roughly into eastern and western segments.

Eastern subarea. The eastern segment makes up slightly less than one half of the terrace upland and corresponds approximately to the area bounded on the west by the Vermilion River and Louisiana Highway 182.

This subarea is characterized by a distinctive meander belt topography in which a number of abandoned channels and courses are apparent. Much of this area has been described as an upper deltaic plain or lower alluvial plain of the Mississippi River (*21*). These extensive alluvial deposits are nowhere exposed at the surface in the area. Instead, the entire subarea is covered with loessial deposits that range to 20 feet or more in thickness. These deposits mantle the topography that was in existence at the time they were deposited. Such meander belt features as natural levees and abandoned channels are, to varying degrees, preserved topographically and can be distinguished on aerial photographs or contour maps. Nowhere in the area do typical meander belt distributions of kinds of soil or texture of the soil materials occur on the modern surface.

Except for small areas of local alluvium, the modern soils have all developed in a uniform silty deposit and have differences attributable to differences in relief and living organisms such as vegetation. The distribution of different soils in the area tends to parallel the topographic features of the meander belt that are expressed at the surface in the overlying loess. This is true to the extent that the better drained soils are in the higher landscape positions, while soils with characteristics resulting from restricted drainage are in lower positions. These relationships are to be expected, since relief and landscape position have a major role in soil formation.

Western subarea. The western subarea makes up slightly more than one half of the terrace upland and corresponds approximately to the area west of the Vermilion River and Louisiana Highway 182. Saucier (*21*) and other investigators (*3*) have described the area as a relict deltaic plain of the Red River characterized by numerous segments of southwest-trending meander belts, extraordinarily flat topography, and predominantly clayey deposits.

Like the eastern subarea, this subarea is largely covered with loessial deposits which mantle the existing topography and, as a result, reflect many of the deltaic plain topographic features on the modern surface. The thinnest loess deposits are in the western part of the parish where in some places sediments of the Prairie Formation are exposed. In these locations they are the parent material of the Crowley and Mowata soils. These areas are almost entirely in the western third of the parish, where they occur as minor components of the Patoutville-Frost and Jeanerette map units on the General Soil Map. Because of the minor acreages of Crowley and Mowata soils in these areas, they are not included in the names of the map units.

In the western subarea as in the eastern subarea, soil distribution patterns do not reflect the kinds of soils or textures of soil materials typical of meander belts or abandoned stream courses.

The distribution of different soils tends to reflect the deltaic plain topographic features that have surface expression. The better drained soils are on the higher landscape positions, and the more poorly drained soils are in the lower landscape positions. These expected soil-topography relationships hold for soils in the area developed in either loess or in the older alluvial sediments.

Loess. Investigations conducted during the course of the survey indicated that throughout most of the area the terrace upland is mantled by uniform-textured, silty deposits that have very low sand content. These, in turn, are underlain by the alluvial deposits already described in the discussion of the Prairie Formation. The sediments in the Prairie Formation have varying textures and appreciably higher sand content than the overlying loess. On the basis of numerous observations throughout the parish, it was determined that the silty deposits are thickest at the eastern edge of their area of occurrence and become progressively thinner to the west. These silty deposits have texture, color, and distribution characteristics typically associated with loess (*7, 29*) and were described as such by Emerson (*8*) in 1918 and by Daniels and Young (*7*) in 1968.

The loess deposits are not restricted to the terrace upland. Investigations during the survey revealed that they cover the escarpment to the lower lying Mississippi River Alluvial Plain. On some of the steepest parts of the escarpment, the deposits are thin or absent apparently because of past erosion. In the alluvial plain the deposits extend eastward from the escarpment. In most areas at this lower elevation, they are buried beneath more recent Mississippi River alluvium. Areas that were not covered by alluvium represent topographic highs in the old landscape; these highs were not inundated by floodwaters. In the present landscape they occur as slightly elevated areas of soils developed in loess adjacent to or surrounded by soils developed in Mississippi River alluvium at lower elevations. These relationships suggest the presence of either a loess-covered terrace younger than the prairie terrace in this area or a lower-lying component of the prairie terrace east of the escarpment and largely buried beneath the alluvial sediments.

An appreciable period of time elapsed between the deposition of the alluvial sediments and the later deposition of the overlying loess. This is indicated by the presence, almost everywhere, of recognizable horizons of soils that developed in the alluvial deposits and that were later buried by the overlying loess. The area covered by loess corresponds approximately to the Acy-Coteau, Memphis-Frost, Coteau-Frost, Patoutville-Frost, and Jeanerette units shown on the General Soil Map.

The characteristics and distribution of the loess, the time of its deposition, and the source of the sediments in the lower Mississippi Valley have been the subject of a number of studies. Generally, the results indicated that loess is a calcareous, tan, eolian deposit composed predominately of silt and having very low sand content (*8, 16, 21, 23, 24*). Snowden (*23, 24*) studied loess deposits in the lower Mississippi Valley near Vicksburg, Mississippi and found a rather uniform mineralogy. The loess was chiefly silt-sized quartz and feldspars; it averaged about 66 percent quartz, 20 percent carbonates, 5 percent feldspars, 7 percent clay minerals, and 2 percent accessory heavy minerals. Smectites dominated the clay mineral assemblage, and there were lesser amounts of illite and kaolinite. Typically, the loess deposits in the survey area are leached free of carbonates except for secondary accumulations in the lower part of the solum of some of the more poorly drained soils.

The source of the loess throughout the southern Mississippi Valley is generally thought to be the flood plain of the Mississippi River at a time when the river drained areas of active glaciation (*16, 29*). Leighton and Willman (*16*) have described in detail how, during dry periods, winds blowing across these flood plains can transport and deposit silty materials over adjacent areas. Characteristically, the deposits are rather uniformly thinner with increasing distance from the source (*29*). Their maximum thickness in Lafayette Parish is a little more than 20 feet along part of the eastern edge of the area, and they become progressively thinner to the west. The rate of thinning is such that the deposits are less than 4 feet thick in the western part of the parish. In areas where the loess is less than about 4 feet thick, it typically contains an admixture of the underlying sediment. The Crowley and Mowata soils formed in sediments of the Prairie Formation, in areas where the loess is absent or very shallow.

More than one interval of loess deposition has been indicated for some of the lower Mississippi Valley area, and somewhat differing times of deposition have been proposed. Saucier's report (*21*) indicates an age of about 20,000 years for loess in the area of Louisiana approximately 60 miles northeast of Lafayette Parish. The loess in Lafayette Parish covers most of the Prairie terrace, which Saucier indicates is 80,000 to 100,000 years old. At lower elevations in the northeastern part of the parish, the loess is overlain by younger Mississippi River alluvial deposits, which he places at about 4,700 to 6,000 years old.

In most geological reports (*12, 20, 21*) these loessial deposits are either not described or are considered to be natural levee deposits of streams. A number of their characteristics, however, are inconsistent with those of natural levee deposits. Examples include the extreme width, uniform textures, and low sand content of the deposits. Throughout Lafayette Parish the silty deposits are essentially uniform in texture, lack interstratified sand and clay lenses, typically have sand content of less than 5 percent, and occur in a band greater than 15 miles wide. This contrasts with the stratified natural levee deposits along the Mississippi River; those deposits range from sandy to clayey in texture within a band that generally extends less than 5 miles back from the river. In addition, thickness of the loess does not change across various kinds of topography except as it is related to distance west of its eastern edge, and loess forms a true mantle across the underlying topography (*7*). Alluvial deposits, on the other hand, tend to obliterate pre-existing topographic features such as the meander belt topography in the eastern subarea of the terrace upland. Other examples of inconsistencies with natural levee deposits include the continuous nature of the loess deposits without regard to elevation and the presence, beneath the loess, of buried soils with distinct horizonation. Recognizable buried soils are present at most locations. Such limited erosion and scouring would be highly improbable during overflow of a stream large enough to be capable of forming continuous natural levees in excess of 15 miles wide. Also, in the northwestern part of the parish, the loess deposits form a continuous mantle from the terrace upland eastward across the escarpment to the Mississippi River Alluvial Plain where, in most areas, they are covered by more recent Mississippi River alluvium. Differences in elevation between these two areas amounts to 40 feet or more in some places.

Mississippi River Alluvial Plain

Within the general area described as the Mississippi River Alluvial Plain are soils developed in three distinct parent materials: Mississippi River alluvium, loess, and Red River alluvium.

Elevations in the area range from slightly more than 25 feet at the northern edge of the parish to slightly less than 10 feet at the southern edge. The overall regional slope averages approximately 1 foot per mile to the south. Nearly level topography characterizes the entire area, and local relief is generally less than 5 feet. Bayou Vermilion provides surface drainage and occupies a channel cut 10 to 15 feet below the adjacent alluvium. The general appearance of the area is that of a lower natural levee and associated back-swamp deposits in which the natural levee has a general east-to-west slope.

Mississippi Valley alluvial deposits cover about 8 percent of the parish. They are restricted to, and occupy most of, this relatively narrow north-south band along the eastern edge of the parish.

Sediments carried by the Mississippi River are of varied origin. They may have originated anywhere in a drainage area that extends from Western Montana to Eastern Pennsylvania. Sorting of the sediments during deposition, together with a diverse mineralogy, results in considerable differences in the deposits. Mineralogical studies (*25*) of the alluvium indicated that smectite minerals are predominant in the clay-sized fraction, and secondary amounts of micaceous clays are present. Associated with these are lesser amounts of kaolinite, chlorite-vermiculite intergrade, and quartz minerals. The sand-sized and silt-sized fractions are comprised largely of quartz, a sizable amount of feldspars, and smaller amounts of a variety of minerals, including such readily weatherable components as biotite and hornblende. Partial sorting of these materials occurs when the stream overflows and the initial decrease in velocity and transporting capacity of the water results in rapid deposition of sediments. As the velocity of the water decreases, the initial deposits are high in content of sand. These are followed by sediments high in content of silt. These, in turn, are followed by more clayey materials. The clayey backswamp sediments are deposited from still or slowly moving water in low areas in back of the natural levees. Characteristically, this depositional pattern results in long, nearly level slopes that extend from the natural levees near the streams to the clayey backswamp deposits.

Geologists generally agree that these deposits of Mississippi River sediments were laid down a few thousand years ago at a time when the river flowed in the western part of its alluvial plain. Bayou Teche flows a few miles east of Lafayette Parish and occupies an old, partially filled channel of the Mississippi River formed during that time. The channel of Bayou Teche approximately parallels the area of the Mississippi River alluvium in the parish 2 to 6 miles to the east. Work published by Saucier (*21*) in 1974 indicates that the accumulation of Mississippi River sediments started about 6,000 years ago and continued until approximately 4,700 years ago. During at least part of this time, Bayou Vermilion served as a distributary channel for the Mississippi. Consequently, the major accumulation of sediments was likely associated with the main channel now occupied by Bayou Teche with lesser contributions from distributary channels such as Bayou Vermilion. The distance of Lafayette Parish from the main (Teche-Mississippi) channel resulted in mostly lower natural levee and associated backswamp deposits in the parish. Baldwin soils developed in the least clayey of these sediments and occupy the higher and intermediate elevations on the alluvial plain. Iberia soils developed in somewhat more clayey sediments and generally are at lower elevations than Baldwin soils. Sharkey and Fausse soils developed in the most clayey of these sediments and are at the lowest elevations in the area. Consequently, in the parish, the Mississippi River alluvial areas correspond to the Fausse-Sharkey and Sharkey-Baldwin-Iberia units shown on the General Soil Map. Gallion soils, which developed in more recent Red River alluvium, make up less than 0.5 percent of the area and are not included in the name of the unit.

The Mississippi River abandoned the meander belt in the western part of its alluvial plain about 4,700 years ago and established new channels in the eastern part of the flood plain near Baton Rouge (*21*). The surface deposits of Red River alluvium in this area result from the flow of the Red River down the Teche-Mississippi channel subsequent to the abandonment of the channel by the Mississippi. According to Saucier (*21*), deposition of Red River sediments occurred in this area during the last few hundred years the Mississippi occupied the channel and for a period of several hundred years afterward. Studies of these ancient drainage systems indicate that during that time, the Red River joined the Teche-Mississippi channel in St. Landry Parish several miles north of Lafayette Parish. The areas of Red River alluvium along old Teche-Mississippi distributary streams such as Bayou Vermilion indicate that these streams also served as distributaries for the Red River after it occupied the former Mississippi channel.

Several authors (*10, 12*) have described the relationships between the Mississipi River sediments and the more recent sediments deposited by the much smaller Red River along the old Teche-Mississippi channel. Along Bayou Vermilion these relationships parallel those described by Howe and Moresi (*12*) along Bayou Teche. The narrow strips of loamy Red River alluvium are along both sides of Bayou Vermilion. These sediments occur entirely within the older natural levee of the stream except in rare instances where crevasse channels have broken through and deposited small areas of sediment. The Gallion soils developed in the loamy Red River alluvium and occur as a minor component in the Sharkey-Baldwin-Iberia and Fausse-Sharkey units shown on the General Soil Map.

Within Lafayette Parish the Mississippi River alluvium was deposited on a land surface already covered with loess. In several places the loess is exposed as islands above the Mississippi River alluvium. Typically, these areas have maximum elevations no more than a few feet higher than the adjacent alluvium. From the higher points they slope almost imperceptibly to lower elevations, where the loess is covered by more recent alluvium. At the perimeter of these areas and at a number of other locations, soils developed in loess can be recognized. These soils are now buried by as much as several feet of alluvium. These buried soils have morphology essentially identical to the morphology of soils developed in loess on the terrace upland. Areas of the Acy-Coteau unit shown on the General Soil Map are areas of soils, developed in loess, that are surrounded by Mississipi River alluvium.

History and development

Lafayette Parish was organized in 1823, and in 1844, Vermilion Parish was created from it. Lafayette Parish lies in what was known during the Spanish and French occupancy of Louisiana as the "Attakapas District," named after the Attakapas Indians, who once held the region.

During the first half of the eighteenth century, the only settlers in this section were traders and trappers. The Acadians arrived soon after 1770. The increase in population was steady; at the time the parish was organized, its population was 5,653. In 1910, the population was 28,733 (*9*), and in 1970, it was 111,745.

Industry and commerce

Oil and gas are the main industries in the parish. Other industries include canning, dehydrating sweet potatoes and other vegetables, manufacturing building materials and electrical appliances, metal working, aluminum fabricating, and millworking.

Lafayette is a distribution center for many items. The network of good highways that lead into it and its strategic location enables Lafayette to boast of a trade area that has a radius of 50 miles. The city serves a retail trade area for about 500,000 people. Lafayette is within a convenient distance of some of southwest and south-central Louisiana's largest and richest oil fields as well as some of the most productive offshore installations. It is, therefore, a logical point from which the oil industry administers its nearby installations through either district or regional headquarters. More than 600 oil companies and allied firms are represented in the parish.

Transportation

A network of roads, mostly hard-surfaced state and parish highways, is in the parish. Interstate Highway 10 crosses the parish near Lafayette, and U.S. Highways 167 and 90 intersect in Lafayette.

The parish is served by an east-west main line and a north-south branch line of the Southern Pacific Railroad. In addition, airlines make daily flights to and from Lafayette.

Lafayette Parish has one minor water transportation route—the Vermilion River. This waterway allows small barges to reach Lafayette.

Water resources

Lafayette Parish has about 925 acres of surface water. The Vermilion River, the largest single area of surface water, supplies about 16 percent of the total water used for irrigation; the water is of very poor quality for most of the year, however, and is unsuitable for domestic or recreational use (*14*).

Underground freshwater sources yield large quantities of hard water. Wells range in depth from 200 feet to more than 700 feet and yield as much as 4,000 gallons per minute. Yields generally range from 1,000 to 2,000 gallons per minute. Water levels range in depth from 20 to 70 feet (*19*).

Ground water is used primarily for municipal, agricultural, industrial, and thermoelectric purposes. All present and projected water requirements can be met, and no critical problems are foreseen. The maximum practical withdrawal rate from the Chicot aquifer (Quaternary Period) is estimated to be 150 million gallons per day, which greatly exceeds the projected use for the year 2020. The iron content of ground water taken from this aquifer requires that the water be treated before it can be used by the public (*17*).

How this survey was made

Soil scientists made this survey to learn what kinds of soil are in the survey area, where they are, and how they can be used. The soil scientists went into the area knowing they likely would locate many soils they already knew something about and perhaps identify some they had never seen before. They observed the steepness, length, and shape of slopes; the size of streams and the general pattern of drainage; the kinds of native plants or crops; and many facts about the soils. They dug many holes to expose soil profiles. A profile is the sequence of natural layers, or horizons, in a soil; it extends from the surface down into the parent material, which has been changed very little by leaching or by the action of plant roots.

The soil scientists recorded the characteristics of the profiles they studied, and they compared those profiles with others in parishes nearby and in places more distant. Thus, through correlation, they classified and named the soils according to nationwide, uniform procedures.

After a guide for classifying and naming the soils was worked out, the soil scientists drew the boundaries of the individual soils on aerial photographs. These photographs show woodlands, buildings, field borders, roads, and other details that help in drawing boundaries accurately. The soil map at the back of this publication was prepared from aerial photographs.

The areas shown on a soil map are called soil map units. Some map units are made up of one kind of soil, and others are made up of two or more kinds of soil. Map units are discussed in the section "Soil maps for detailed planning."

While a soil survey is in progress, samples of soils are taken as needed for laboratory measurements and for engineering tests. The soils are field tested, and their interpretations are modified as necessary during the course of the survey. New interpretations are added to meet local needs, mainly through field observations of different kinds of soil in different uses under different levels of management. Also, data are assembled from other sources, such as test results, records, field experience, and information available from state and local specialists. For example, data on crop yields under defined practices are assembled from farm records and from field or plot experiments on the same kinds of soil.

But only part of a soil survey is done when the soils have been named, described, interpreted, and delineated on aerial photographs and when the laboratory data and other data have been assembled. The mass of detailed information then needs to be organized so that it is readily useful to different groups of users, among them farmers, managers of rangeland and woodland, engineers, planners, developers and builders, homebuyers, and those seeking recreation.

General soil map for broad land-use planning

The general soil map at the back of this publication shows, in color, the map units for broad land-use planning described in this survey. Each map unit is a unique natural landscape that has a distinct pattern of soils and of relief and drainage features. A unit typically consists of one or more soils of major extent and some soils of minor extent. It is named for the major soils. The kinds of soil in one unit can occur in other map units, but in a different pattern.

The map provides a broad perspective of the soils and landscapes in the survey area. It provides a basis for comparing the potential of large areas for general kinds of land use. Areas that are generally suitable for certain kinds of farming or other land uses can be identified on the map. Likewise, areas of soils having properties that are distinctly unfavorable for certain land uses can be located.

Because of its small scale, the map does not show the kind of soil at a specific site. Thus, it is not suitable for planning the management of a farm or field or for selecting a site for a road or building or other structure; the kinds of soils in any one map unit ordinarily differ from place to place in slope, drainage, or other characteristics that affect their management.

The map units in the survey area vary widely in their potential for major land uses. Table 3 shows the extent of each map unit and gives general ratings of the potential of each, in relation to the other map units for each major land use. Adverse soil properties that pose limitations to the use are indicated. The ratings of soil potential are based on the assumption that practices in common use in the parish are used to overcome soil limitations. These ratings reflect the ease of overcomming such soil limitations and probability of soil problems persisting after such practices are used. The location of existing transportation systems or other kinds of facilities are not considered.

Each unit is rated for *cultivated farm crops*, *urban uses*, *intensive recreation areas*, and *pastureland*. Cultivated farm crops are those grown extensively by farmers in the survey area. Urban uses include residential, commercial, and industrial developments. Intensive recreation areas are campsites, picnic areas, ballfields, and other areas that are subject to heavy foot traffic. Pastureland is land devoted primarily to grasses that livestock graze.

Map unit descriptions

1. Sharkey-Baldwin-Iberia

Level to nearly level, poorly drained clayey and loamy soils that formed in alluvium

This map unit is at low elevations on the alluvial plain in the eastern part of the parish. It makes up about 6 percent of the parish. About 42 percent of the area is Sharkey soils, 25 percent is Baldwin soils, 25 percent is Iberia soils, and the remaining 8 percent is minor soils.

Sharkey soils are somewhat lower in elevation than Baldwin soils and slightly lower in elevation than Iberia soils. Sharkey soils have a surface layer of clay, Baldwin soils have a surface layer of silty clay loam, and Iberia soils have a surface layer of silty clay. All three soils have a clayey subsoil, have a seasonal high water table, and are poorly drained.

The minor soils in this map unit are the well drained Gallion soils and the very poorly drained Fausse soils.

This map unit is used mainly as pastureland and woodland, and a small acreage is used as cropland. Soil wetness is the main limitation to most uses, and high shrink-swell potential and low strength are limitations to some uses.

Potential as cropland and pastureland is good. To achieve this potential, a good drainage system is required.

Potential for intensive recreation areas and urban use is poor. Soil wetness and high shrink-swell potential are difficult to overcome. Low strength is not difficult to overcome.

2. Acy-Coteau

Nearly level, somewhat poorly drained loamy soils that formed in loess

This map unit is on the low terraces adjacent to the alluvial plain in the northeastern part of the parish. It makes up about 2.5 percent of the parish. About 36 percent of the area is Acy soils, 20 percent is Coteau soils, and the remaining 44 percent is minor soils.

Acy soils are at lower elevations than Coteau soils. Both soils are loamy throughout and have a seasonal high water table.

The minor soils in this map unit are the somewhat poorly drained Patoutville soils, the poorly drained Frost soils, and the poorly drained Baldwin soils.

This map unit is used mainly as cropland and pastureland, and a small acreage is used for urban development. Wetness is a limitation to most uses, and low strength is a limitation to some uses.

Potential as cropland and pastureland is very good. The loamy texture, the nearly level slopes, and the wide choice of adapted plants make this unit a choice area for cropland and pastureland.

Potential for intensive recreation areas and urban use is fair. Soil wetness and low strength are not difficult to overcome.

3. Memphis-Frost

Gently sloping to nearly level, well drained and poorly drained loamy soils that formed in loess

This map unit is at the highest elevations in the parish. It is on the terrace upland in the eastern part of the parish. It makes up about 22.5 percent of the parish. About 71 percent of the area is Memphis soils, 14 percent is Frost soils, and the remaining 15 percent is minor soils.

The well drained Memphis soils are on drainage divides and on side slopes. They are loamy throughout and are not wet during any season. The poorly drained Frost soils are in narrow, concave areas along drainageways. They are loamy throughout and have a seasonal high water table. Lower areas of Frost soils are subject to occasional flooding.

The minor soils in this map unit are the somewhat poorly drained Coteau soils.

This map unit is used mainly for urban purposes (fig. 4) and as pastureland. A small acreage is used as cropland. Low strength is a limitation to some uses, and wetness is a limitation to most uses along drainageways.

Potential as cropland and pastureland is good. Complete fertilizers and lime are generally needed for most crops, and erosion control measures need to be installed on sloping lands. A wide range of pasture plants is adapted.

Potential for intensive recreation areas and urban use is good. Low strength is not difficult to overcome. Wetness of the soils along the drainageways is somewhat difficult to overcome.

4. Coteau-Frost

Very gently sloping to nearly level, somewhat poorly drained and poorly drained loamy soils that formed in loess

This map unit is on the terrace upland in the north-central, central, and south-central parts of the parish. It makes up about 27 percent of the parish. About 43 percent of the area is Coteau soils, 40 percent is Frost soils, and the remaining 17 percent is minor soils.

The somewhat poorly drained Coteau soils are on stream divides, in very gently undulating areas, and on very gently sloping side slopes. The poorly drained Frost soils are at lower elevations in nearly level, concave areas and in narrow, concave areas along drainageways. Both soils are loamy throughout and have a seasonal high water table.

The minor soils in this map unit are the well drained Memphis soils and the somewhat poorly drained Patoutville soils.

This map unit is used mainly as cropland and pastureland. A small acreage is in urban use. Soil wetness is the main limitation to most uses, and low strength is a limitation to some uses.

This map unit has good potential as cropland and pastureland. For maximum yields, a surface drainage system is generally required. Complete fertilizers and lime are generally needed for most crops.

Potential for intensive recreation areas and urban use is fair. Wetness and low strength are not difficult to overcome.

5. Patoutville-Frost

Nearly level, somewhat poorly drained and poorly drained loamy soils that formed in loess

This map unit is on the terrace upland in the western part of the parish. It makes up about 27 percent of the parish. About 41 percent of the area is Patoutville soils, 36 percent is Frost soils, and the remaining 23 percent is minor soils.

The somewhat poorly drained Patoutville soils are on broad stream divides. The poorly drained Frost soils are in nearly level, concave areas at lower elevations. Both soils are loamy throughout and have a seasonal high water table.

The minor soils in this map unit are the somewhat poorly drained Crowley, Coteau, and Jeanerette soils and the poorly drained Mowata soils.

This map unit is used mainly as cropland and pastureland. A small acreage is in urban use. Soil wetness is the main limitation to most uses, and low strength is a limitation to some uses.

This map unit has good potential as cropland and pastureland if soil wetness is overcome. A surface drainage system is required for maximum yields. Complete fertilizers and lime are generally needed for most crops.

Potential for intensive recretion areas and urban use is fair. Soil wetness and low strength are not difficult to overcome.

6. Jeanerette

Level to nearly level, somewhat poorly drained loamy soils that formed in loess or in mixed loess and alluvial sediments

This map unit is in broad, nearly level areas on the terrace upland in the western part of the parish. It makes up about 13 percent of the parish. About 54 percent of the area is Jeanerette soils, and the remaining 46 percent is minor soils.

Jeanerette soils are somewhat poorly drained and are loamy throughout. They have a seasonal high water table.

The minor soils in this map unit are the poorly drained Frost, Basile, Judice, and Mowata soils and the somewhat poorly drained Crowley and Patoutville soils.

This map unit is used mainly as cropland, and a small acreage is in pastureland and urban areas. Rice and soybeans are the main crops. Irrigation systems have been installed on much of the acreage. Soil wetness is the main limitation to most uses, and low strength is a limitation to some uses.

This map unit has very good potential as cropland and pastureland. The loamy surface layer, the high fertility, and the level to nearly level slopes make the soils of this map unit the choice land in the parish for cropland. A surface drainage system is generally required to achieve maximum yield and efficiency of farm equipment. Lime is generally not needed.

Potential for intensive recreation areas and urban use is fair. Soil wetness and low strength are not difficult to overcome.

7. Fausse-Sharkey

Level, very poorly drained and poorly drained clayey soils that formed in alluvium

This map unit is at the lowest elevation in the parish in swamp on the alluvial plain in the extreme eastern part of the parish. It makes up about 2 percent of the parish. About 65 percent of the area is Fausse soils, 24 percent is Sharkey soils, and the remaining 11 percent is minor soils.

The very poorly drained Fausse soils are at lower elevations than Sharkey soils. They have a water table that is at or above the surface for part of the year. The poorly drained Sharkey soils have a seasonal high water table that extends to the surface mainly from December through April.

The minor soils in this map unit are soils that are similar to Fausse soils except that they have very dark gray layers in the subsoil or that they have semifluid underlying layers.

This map unit is used almost entirely as woodland and for wildlife habitat. Soil wetness and frequent flooding are the main limitations to most uses.

This map unit has very poor potential as cropland and pastureland because of soil wetness and flooding.

Potential for intensive recreation areas and urban use is also very poor because of soil wetness and flooding. The map unit furnishes good natural habitat for many wildlife species.

Broad land-use considerations

The map units in the parish vary widely in their potential for major land uses, as indicated in table 3. For each land use, general ratings of the potential of each map unit are indicated. Adverse and favorable soil properties are also indicated in general terms. The ratings of soil potential reflect the relative cost of practices needed to overcome soil limitations and also the hazard of continued soil-related problems after such practices are installed. The ratings do not consider location in relation to existing transportation systems or other kinds of facilities.

Land uses considered in table 3 are cultivated farm crops, urban uses, intensive recreational areas, and pastureland.

Each year considerable land is being developed for urban uses in and around the city of Lafayette and other towns in the parish. About 22,000 acres, or approximately 13 percent of the parish, was urban or built-up land in 1972 (*15*). The Memphis-Frost map unit has good potential for urban use and is considered choice land in the parish for that purpose because it is mostly well drained, at high elevations, and not likely to be flooded. The other map units in the parish have fair potential for urban use except the Sharkey-Baldwin-Iberia map unit, which has poor potential because of wetness and poor engineering characteristics, and the Fausse-Sharkey map unit, which has very poor potential mainly because of the flooding hazard.

The map units of the parish have good to very good potential as cropland except the Fausse-Sharkey map unit, which has very poor potential. The high water table and frequent flooding over much of this map unit severely restrict its potential for cropland. In order to achieve maximum crop production, surface drainage systems generally have to be installed on much of the cropland to remove excess surface water. Erosion control measures are needed on the Memphis-Frost map unit.

All map units in the parish have good to very good potential as pastureland except the Fausse-Sharkey map unit, which has very poor potential. The high water table and the frequent flooding on this map unit severely limit the choice of plants and grazing time.

The Memphis-Frost map unit has good potential for intensive recreation areas. The other map units in the parish have fair potential for intensive recreation areas except the Sharkey-Baldwin-Iberia map unit, which has poor potential because it is clayey, and the Fausse-Sharkey map unit, which has very poor potential because of frequent flooding.

The map units in the parish vary in their suitability for various land uses. Soils information can be used as a guide in planning the orderly growth and development of the parish. It is especially helpful in determining which lands to allocate to each use.

Soil maps for detailed planning

The map units shown on the detailed soil maps at the back of this publication represent the kinds of soil in the survey area. They are described in this section. The descriptions together with the soil maps can be useful in determining the potential of a soil and in managing it for food and fiber production; in planning land use and developing soil resources; and in enhancing, protecting, and preserving the environment. More information for each map unit, or soil, is given in the section "Use and management of the soils."

Preceding the name of each map unit is the symbol that identifies the soil on the detailed soil maps. Each soil description includes general facts about the soil and a brief description of the soil profile. In each description, the principal hazards and limitations are indicated, and the management concerns and practices needed are discussed.

The map units on the detailed soil maps represent an area on the landscape made up mostly of the soil or soils for which the unit is named. Most of the delineations shown on the detailed soil map are phases of soil series.

Soils that have a profile that is almost alike make up a *soil series*. Except for allowable differences in texture of the surface layer or of the underlying substratum, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement in the profile. A soil series commonly is named for a town or geographic feature near the place where a soil of that series was first observed and mapped. The Patoutville series, for example, was named for the town of Patoutville in Iberia Parish.

Soils of one series can differ in texture of the surface layer or in the underlying substratum and in slope, erosion, stoniness, salinity, wetness, or other characteristics that affect their use. On the basis of such differences, a soil series is divided into phases. The name of a *soil phase* commonly indicates a feature that affects use or management. For example, Memphis silt loam, 0 to 1 percent slopes, is one of several phases within the Memphis series.

Some map units are made up of two or more dominant kinds of soil. Such map units are called soil complexes, soil associations, and undifferentiated groups.

A *soil complex* consists of areas of two or more soils that are so intricately mixed or so small in size that they cannot be shown separately on the soil map. Each area includes some of each of the two or more dominant soils, and the pattern and proportion are somewhat similar in all areas. Coteau-Frost complex is an example.

A *soil association* is made up of soils that are geographically associated and are shown as one unit on the map because it is not practical to separate them. A soil association has considerable regularity in geographic pattern and in the kinds of soil that are a part of it. The extent of the soils can differ appreciably from one delineation to another; nevertheless, interpretations can be made for use and management of the soils. Fausse association is an example.

An *undifferentiated group* is made up of two or more soils that could be mapped individually but are mapped as one unit because there is little value in separating them. The pattern and proportion of the soils are not uniform. An area shown on the map has at least one of the dominant (named) soils or may have all of them. Frost soils, occasionally flooded, is an undifferentiated group in this survey area.

Most map units include small, scattered areas of soils other than those that appear in the name of the map unit. Some of these soils have properties that differ substantially from those of the dominant soil or soils and thus could significantly affect use and management of the map unit. These soils are described in the description of each map unit. Some of the more unusual or strongly contrasting soils that are included are identified by a special symbol on the soil map.

The acreage and proportionate extent of each map unit are given in table 4, and additional information on properties, limitations, capabilities, and potentials for many soil uses is given for each kind of soil in other tables in this survey. (See "Summary of tables.") Many of the terms used in describing soils are defined in the Glossary.

Soil descriptions

1—Acy silt loam. This nearly level soil is in rather broad areas at the higher elevations on the low terraces in the northeastern part of the parish. It formed in loess. It is in areas of about 10 to 300 acres. Slopes are less than 1 percent.

Typically, the surface layer is neutral, dark gray silt loam 5 inches thick. The subsoil to a depth of 26 inches is moderately alkaline, grayish brown silty clay loam mottled mostly with yellowish brown. Below this, to a depth of 60 inches or more, it is moderately alkaline, grayish brown silt loam mottled with yellowish brown.

This soil is moderately high in fertility. Plant roots penetrate the soil easily, and water and air move at a moderately slow rate through the soil. Water runs off the surface at a slow rate. The seasonal high water table fluctuates between depths of 1.5 and 2.5 feet during December through April. The surface layer is wet for significant periods in winter and spring. Sufficient water is available to plants in most years.

Included with this soil in mapping are a few small areas of Frost and Baldwin soils.

Most of the acreage is in cropland and pastureland. A small acreage is in urban use.

Potential as cropland and pastureland is very good. The nearly level slopes, moderately high fertility, and loamy texture make this soil favorable for cultivated crops; however, wetness is a less favorable feature for this use.

The main suitable crops are sugarcane, soybeans, rice, grain sorghum, sweet potatoes, and truck crops. The main suitable pasture plants are common bermudagrass, bahiagrass, ryegrass, improved bermudagrass, and white clover. This soil is friable and somewhat easy to keep in good tilth. It can be worked over a somewhat wide range of moisture content. A surface drainage system is generally needed for most cultivated crops. Land grading or smoothing improves surface drainage and increases the efficiency of farm equipment. Proper management of crop residue helps maintain organic matter content and reduce soil losses by erosion. Irrigation is needed for rice. Most crops and pasture plants respond well to complete fertilizer. Lime is generally not needed.

Potential for urban use is fair. Wetness is a limitation to such uses as septic tank absorption fields, sanitary landfills, homesites, and local roads and streets. Low strength is a limitation to use as foundations or construction material.

Potential for intensive recreation areas is fair. Wetness is a limitation to such uses as playgrounds and golf courses. Capability subclass IIw; woodland suitability group 2w5.

2—Baldwin silty clay loam. This nearly level soil is on narrow ridges on the alluvial plain in the eastern part of the parish. It formed in clayey alluvium. It is in areas of about 10 to 200 acres. Slopes are less than 1 percent.

Typically, the surface layer is slightly acid, very dark grayish brown silty clay loam about 7 inches thick. The subsoil to a depth of 17 inches is medium acid, dark gray silty clay mottled with yellowish brown. To a depth of 25 inches, it is neutral, gray silty clay mottled with yellowish brown, and to a depth of 41 inches, it is mildly alkaline, olive gray silty clay mottled with yellowish brown. The underlying material is mildly alkaline, olive gray silt loam.

This soil is moderately high in fertility. Plant roots penetrate the soil rather easily, and water and air move at a very slow rate through the soil. Water runs off the surface at a slow rate. The seasonal high water table fluctuates between a depth of 2 feet and the surface during December through April. The surface layer is wet for long periods in winter and spring. Adequate water is available to plants during most years.

Included with this soil in mapping are a few small areas of Acy and Iberia soils and Baldwin soils that have a surface layer of silt loam.

Most of the acreage is in cropland and pastureland. A small acreage is in woodland.

Potential as cropland and pastureland is good. The nearly level slopes and moderately high fertility make this soil favorable for cultivated crops; however, wetness and clayey texture are less favorable features for this use.

The main suitable crops are sugarcane, soybeans, rice, and truck crops. The main suitable pasture plants are common bermudagrass, dallisgrass, ryegrass, bahiagrass, white clover, and tall fescue. The soil is somewhat difficult to keep in good tilth. It can be worked only within a fairly narrow range of moisture content. A drainage system is needed for cropland and pastureland. Land grading and smoothing improve surface drainage and increase the efficiency of farm equipment. Proper management of crop residue helps maintain organic matter content and reduce soil losses by erosion. Irrigation is needed for rice. Most crops and pasture plants respond well to complete fertilizer. Lime is generally not needed.

Potential for urban use is poor. Wetness is a limitation for such uses as septic tank absorption fields, sanitary landfills, homesites, and local roads and streets. High shrink-swell potential is a limitation to use as foundations or construction material.

Potential for intensive recreation areas is poor. Wetness is a limitation to such uses as playgrounds and golf courses. Capability subclass IIIw; woodland suitability group 2w6.

3—Basile soils, frequently flooded. These nearly level soils are on long, very narrow alluvial plains along Bayou Queue de Tortue and Indian Bayou on the terrace upland. They are subject to frequent flooding. These soils formed in loamy alluvium. Slopes are less than 1 percent.

This map unit is in one elongated tract of about 573 acres. Elevation ranges from 15 to 20 feet above sea level. This map unit is about 75 percent Basile soils and 15 percent soils that are similar to Basile soils but that have an alkaline surface layer. Minor soils make up 10 percent of the map unit; they include Frost, Jeanerette, and Patoutville soils. The proportions of the soils in this unit vary from place to place.

Typically, Basile soils have a surface layer of strongly acid, dark gray silt loam about 6 inches thick. The subsurface layer, to a depth 24 inches, is medium acid, gray and light gray silt loam. The subsoil to a depth of 34 inches is moderately alkaline, gray silty clay loam. To a depth of 50 inches, it is moderately alkaline, light olive gray silty clay loam mottled with light olive brown, and to a depth of 60 inches or more, it is moderately alkaline, gray silty clay loam mottled with light olive brown.

Basile soils are moderate in fertility. Water runs off the surface at a slow rate. Water and air move at a slow rate through the soil. The soil is flooded one or more times each year for short periods. Depth of floodwaters is usually less than 2 feet. During periods when the soil is not flooded, the water table fluctuates between a depth of 1.5 feet and the surface during December through April. Plants sometimes suffer from lack of water during dry periods.

Most of the acreage is in woodland. A very small acreage is in pasture.

Potential as cropland is very poor because of flooding. Flooding precludes use of these soils as cropland in most years. Potential as pastureland is poor because of flooding. Common bermudagrass and bahiagrass are suitable pasture plants, but flooding restricts the time that the soils can be grazed.

Potential for urban use and for intensive recreation areas is very poor. Flooding is a limitation to most uses. Capability subclass Vw; not assigned to a woodland suitability group.

4—**Coteau-Frost complex.** This complex consists of small areas of Coteau and Frost soils that are so intermingled that they could not be separated at the scale selected for mapping. These soils are on very low ridges and in narrow swales on the terrace upland in the south-central part of the parish (fig. 5). Areas range from 80 to 300 acres. These soils formed in loess. Slopes are 0 to 2 percent.

Coteau soils, on very low ridges, make up about 65 percent of each mapped area. Typically, the surface layer is slightly acid, very dark grayish brown silt loam about 7 inches thick. The subsoil to a depth of 16 inches is strongly acid, dark yellowish brown silty clay loam. To a depth of 31 inches, it is strongly acid, dark yellowish brown silt loam mottled with gray; to a depth of 46 inches, it is medium acid, dark yellowish brown silt loam mottled with light brownish gray; and to a depth of 60 inches or more, it is slightly acid, light brownish gray silt loam mottled with dark yellowish brown.

This Coteau soil is moderate in fertility. Plant roots penetrate the soil easily, and water and air move at a moderately slow rate through the soil. Water runs off the surface at a medium rate. The seasonal high water table fluctuates between depths of 1.5 to 3 feet during December through April. The surface layer is wet for significant periods in winter and spring. Sufficient water is available to plants in most years.

Frost soils, in narrow swales, make up about 35 percent of each mapped area. Typically, the surface layer is medium acid, very dark grayish brown silt loam about 9 inches thick. The subsurface layer, to a depth of 26 inches, is strongly acid, light brownish gray silt loam mottled with yellowish brown. The subsoil to a depth of 54 inches is medium acid to strongly acid, gray silty clay loam mottled with brown. To a depth of 60 inches, it is slightly acid, gray silt loam mottled with brown.

This Frost soil is moderate in fertility. Plant roots penetrate the soil easily, and water and air move at a slow rate through the soil. Water runs off the surface at a slow rate. The seasonal high water table fluctuates between a depth of 1.5 feet and the surface during December through April. The surface layer is wet for long periods in winter and spring. Sufficient water is available to plants in most years.

Included with these soils in mapping are a few small areas of Memphis soils. Also included are a few small areas of soils in swales that are subject to flooding.

Most of the acreage is in cropland. A small acreage is in pastureland and urban use.

Potential as cropland and pastureland is good. The uneven surface and excess water in the narrow swales interfere with tillage operations. The main suitable crops are corn, soybeans, sugarcane, grain sorghum, sweet potatoes, and truck crops. The main suitable pasture plants are common bermudagrass, bahiagrass, ryegrass, white clover, southern wild winter peas, vetch, and annual lespedeza. These soils are friable but somewhat difficult to keep in good tilth because of surface crusting. Traffic pans develop easily but can be broken up by deep plowing or chiseling. A surface drainage system is needed to remove excess water from the narrow swales for most cultivated crops and pasture plants. Land grading and smoothing improve surface drainage and increase the efficiency of farm equipment; however, in some cases much soil must be moved. Proper management of crop residue helps maintain organic matter content, which in turn reduces surface crusting and soil loss by erosion. Most crops and pasture plants respond well to complete fertilizer. Lime is generally needed.

Potential for urban use is fair. Wetness is a limitation when these soils are used for septic tank absorption fields, sanitary landfills, homesites, and local roads and streets. Low strength is a limitation when the soils are used as foundations or construction material.

Potential for intensive recreation areas is fair. Wetness is a limitation to such uses as playgrounds and golf courses. Cabability subclass IIIs; Coteau soil in woodland suitability group 1w8; Frost soil in woodland suitability group 2w9.

5—**Coteau silt loam, 0 to 1 percent slopes.** This nearly level soil is on broad, convex stream divides on the terrace upland. It formed in loess mainly in the northern and south-central parts of the parish. It is in areas of about 10 to 500 acres.

Typically, the surface layer is medium acid, dark brown silt loam about 8 inches thick. The subsoil to a depth of 16 inches is strongly acid, dark brown silt loam. To a depth of 26 inches, it is strongly acid, dark yellowish brown silty clay loam mottled with gray; to a depth of 57 inches, it is medium acid, dark yellowish brown silt loam mottled with light brownish gray; and to a depth of 60 inches or more, it is slightly acid, dark brown silt loam that has gray mottles.

This soil is moderate in fertility. Plant roots penetrate the soil easily, and water and air move at a moderately slow rate through the soil. Water runs off the surface at a slow to medium rate. The seasonal high water table fluctuates between depths of 1.5 and 3 feet during December through April. The surface layer is wet for significant periods in winter and spring. Sufficient water is available to plants in most years.

Included with this soil in mapping are a few small areas of Frost, Patoutville, and Memphis soils.

Most of the acreage is in cropland, pastureland, and urban use.

Potential as cropland and pastureland is good. The nearly level slopes and loamy textures make this soil favorable for cultivated crops. The main suitable crops are sugarcane, rice, soybeans, corn, truck crops, and sweet potatoes. The main suitable pasture plants are common bermudagrass, bahiagrass, ryegrass, improved bermudagrass, white clover, southern wild winter pea, vetch, and annual lespedeza. This soil is friable and easy to keep in good tilth. It can be worked over a wide range of moisture content. Traffic pans form easily but can be broken up by deep plowing or chiseling. A surface drainage system is generally needed for most cultivated crops. Land grading or smoothing improves surface drainage and increases the efficiency of farm equipment. Proper management of crop residue helps maintain organic matter content and reduce soil losses by erosion. Irrigation is needed for rice. Most crops and pasture plants respond well to complete fertilizer. Lime is generally needed.

Potential for urban use is fair. Wetness is a limitation to such uses as septic tank absorption fields, sanitary landfills, homesites, and local roads and streets. Low strength is a limitation when the soil is used as foundation or construction materials.

Potential for intensive recreation areas is fair. Wetness is a limitation to such uses as playgrounds and golf courses. Capability subclass IIw; woodland suitability group 1w8.

6—Coteau silt loam, 1 to 3 percent slopes. This very gently sloping soil is on narrow, convex stream divides and side slopes on the terrace upland, mainly in the south-central part of the parish. It formed in loess. It is in areas of about 5 to 100 acres.

Typically, the surface layer is slightly acid, dark grayish brown silt loam about 5 inches thick. The subsoil to a depth of 20 inches is strongly acid, dark yellowish brown silty clay loam. To a depth of 29 inches, it is strongly acid, dark yellowish brown silt loam mottled with gray; to a depth of 48 inches, it is medium acid, yellowish brown silt loam mottled with yellowish brown; and to a depth of 60 inches or more, it is medium acid, light brownish gray silt loam mottled with yellowish brown.

This soil is moderate in fertility. Plant roots penetrate the soil easily, and water and air move at a moderately slow rate through the soil. Water runs off the surface at a medium rate. The seasonal high water table fluctuates between depths of 1.5 and 3 feet during December through April. The surface layer is wet for significant periods in winter and spring. Sufficient water is available to plants in most years.

Included with this soil in mapping are a few small areas of Memphis, Frost, and Patoutville soils. Also included are small areas of Coteau soils that have slopes of more than 3 percent.

Most of the acreage is in cropland and pastureland. A small acreage is in urban use.

Potential as cropland and pastureland is good. The loamy texture makes this soil favorable for cultivated crops; however, the very gentle slopes are a less favorable feature for this use. Erosion is a concern when the soil is bare. The main suitable crops are sugarcane, soybeans, corn, truck crops, and sweet potatoes. The main suitable pasture plants are common bermudagrass, improved bermudagrass, bahiagrass, white clover, ryegrass, southern wild winter peas, vetch, and annual lespedeza. This soil is friable and easy to keep in good tilth. It can be worked over a wide range of moisture content. Traffic pans form easily but can be broken up by deep plowing or chiseling. Proper management of crop residue helps maintain organic matter content and reduce soil losses by erosion. Stripcropping or contour farming is needed on cropland to help reduce erosion. Most crops and pasture plants respond to complete fertilizer. Lime is generally needed.

Potential for urban use is fair. Wetness is a limitation to such uses as septic tank absorption fields, sanitary landfills, homesites, and local roads and streets. Low strength is a limitation when the soil is used as foundations or construction materials.

Potential for intensive recreation areas is fair. Wetness is a limitation to such uses as playgrounds and golf courses; however, the very gentle slopes make this soil favorable for golf courses. Capability subclass IIw; woodland suitability group 1w8.

7—Crowley silt loam. This nearly level soil is on broad, convex drainage divides on the terrace upland in the western part of the parish. It formed in mixed loess and alluvium. It is in areas of about 10 to 100 acres. Slopes are less than 1 percent.

Typically, the surface layer is neutral, dark grayish brown silt loam about 6 inches thick. The subsurface layer is moderately alkaline, grayish brown silt loam that extends to a depth of 14 inches. The subsoil to a depth of 27 inches is strongly acid, grayish brown silty clay mottled with red; to a depth of 46 inches, it is medium acid, gray silty clay loam mottled with yellowish brown; and to a depth of 75 inches or more, it is slightly acid, gray silty clay loam mottled with yellowish brown.

This soil is moderate in fertility. Plant roots penetrate the soil easily, and water and air move at a very slow rate through the soil. Water runs off the surface at a slow rate. The seasonal high water table is perched above the clayey subsoil and fluctuates between a depth of 0.5 and 1.5 feet during December through April. In places, soils that have a strongly developed traffic pan do not have a seasonal high water table. The surface layer is wet for significant periods in winter and spring. Sufficient water is available to plants in most years.

Included with this soil in mapping are a few small areas of Frost, Mowata, Jeanerette, and Patoutville soils.

Most of the acreage is in cropland and pastureland. A small acreage is in urban use.

Potential as cropland and pastureland is good. The nearly level slopes and loamy texture make this soil favorable for cultivated crops; however, wetness is a less favorable feature for this use. The main suitable crops are soybeans and rice. The main suitable pasture plants are common bermudagrass, bahiagrass, ryegrass, improved bermudagrass, vetch, southern wild winter peas, and annual lespedeza. This soil is friable and easy to keep in good tilth; however, surface crusting can be a concern. The soil can be worked over a somewhat wide range of moisture content. Traffic pans develop easily but can be broken up by deep plowing or chiseling. A surface drainage system is generally needed for cropland and pastureland. Land grading and smoothing improve surface drainage and increase the efficiency of farm equipment. Irrigation is needed for rice. Proper management of crop residue helps maintain organic matter content, reduce surface crusting, and reduce soil losses by erosion. Most crops and pasture plants respond well to complete fertilizer. Lime is generally needed except in areas that receive frequent irrigation.

Potential for urban use is poor. Wetness is a limitation to such uses as septic tank absorption fields, sanitary landfills, homesites, and local roads and streets. High shrink-swell potential is a limitation to use as foundations or construction material.

Potential for intensive recreation areas is poor. Wetness is a limitation to such uses as playgrounds and golf courses. Capability subclass IIIw; woodland suitability group 2w9.

8—**Fausse association.** This association consists of level soils in low, depressional areas on the alluvial plain. The soils formed in clayey alluvium. They are in a somewhat large area of about 250 to 1,000 acres in low backswamp of Beau Bassin and Bayou Tortue in the eastern part of the parish. Elevations are generally less than 10 feet. There is little or no runoff from these areas. Slopes are less than 0.25 percent.

A typical area of this map unit is about 80 percent Fausse soils. Sharkey soils, soils that are similar to Fausse soils but that have a subsoil of very dark gray, and soils that are similar to Fausse soils but that have semifluid underlying layers make up the remaining 20 percent of the map unit. The soils that have semifluid layers and those that have the very dark gray subsoil are at low elevations in the deeper depressions throughout mapped areas; Sharkey soils are on the slight ridges.

Typically, the surface layer is medium acid, very dark grayish brown clay about 7 inches thick. The subsoil, to a depth of 37 inches, is neutral, dark gray clay. The underlying material, to a depth of 60 inches or more, is neutral, dark greenish gray clay.

Fausse soils are high in fertility. They are flooded most of the time by runoff from higher areas and backwater from major streams. Floodwaters seldom exceed a depth of 4 feet. During periods when the soils are not flooded, the water table fluctuates between 20 inches below and 6 inches above the surface. Water and air move at a very slow rate through these soils.

Almost all of the acreage is in woodland and is used primarily for wildlife habitat.

Potential as cropland, as pastureland, for urban use, and for intensive recreation areas is very poor because of flooding. If soil wetness and flooding were controlled, however, these soils would have good potential as cropland and pastureland and poor potential for urban use and intensive recreation areas. Capability subclass VIIw; woodland suitability group 4w6.

9—**Frost silt loam.** This nearly level soil is on broad flats on the terrace upland throughout the parish. It formed in loess deposits. It is in areas of about 10 to 600 acres. Slopes are less than 1 percent.

Typically, the surface layer is slightly acid, dark gray silt loam about 7 inches thick. The subsurface layer, to a depth of 14 inches, is strongly acid, gray silt loam mottled with dark grayish brown. The subsoil to a depth of 22 inches is very strongly acid, dark gray silty clay loam. To a depth of 33 inches, it is very strongly acid, gray silty clay loam mottled with dark yellowish brown; to a depth of 46 inches, it is medium acid, gray silty clay loam mottled with dark yellowish brown; and to a depth of 60 inches or more, it is slightly acid, gray silt loam mottled with dark yellowish brown.

This soil is moderate in fertility. Plant roots penetrate the soil easily. Water and air move at a slow rate through the soil. Water runs off the surface at a slow rate. The seasonal high water table fluctuates between a depth of 1.5 feet and the surface during December through April. The surface layer is wet for long periods in winter and spring. This soil dries out more slowly than most of the adjoining soils at higher elevations. Sufficient water is available to plants in most years.

Included with this soil in mapping are a few small areas of Coteau, Acy, Patoutville, Mowata, and Jeanerette soils.

Most of the acreage is in cropland and pastureland. A small acreage is in urban use.

Potential as cropland and pastureland is fair. The nearly level slopes and loamy texture make this soil favorable for crops; however, wetness is a less favorable feature for this use. The main suitable crops are soybeans, rice, sugarcane, sweet potatoes, and truck crops. The main suitable pasture plants are common bermudagrass, bahiagrass, ryegrass, improved bermudagrass, vetch, southern wild winter peas, and annual lespedeza. This soil is friable and easy to keep in good tilth. It can be worked over a somewhat wide range of moisture content. Traffic pans develop easily but can be broken up by deep plowing or chiseling. A surface drainage system is needed for most cultivated crops and pasture plants. Land grading or smoothing improves surface drainage and increases the efficiency of farm equipment. Proper management of crop residue helps maintain organic matter content and reduce soil losses by erosion. Irrigation is needed for rice. Most crops and pasture plants respond well to complete fertilizers. Lime is generally needed.

Potential for urban use is poor. Wetness is a limitation to such uses as septic tank absorption fields, sanitary landfills, homesites, and local roads and streets. Low strength is a limitation to use as foundations or construction material.

Potential for intensive recreation areas is poor mainly because of soil wetness. Capability subclass IIIw; woodland suitability group 2w9.

10—Frost soils, occasionally flooded. These nearly level soils are in long, narrow depressions along drainageways on the terrace upland throughout the parish. They formed in mixed loess and alluvial sediments. They are subject to occasional flooding for short periods. Slopes are less than 1 percent.

These soils are in areas of about 10 to 50 acres. Mapped areas contain Frost soils, soils that are similar to Frost soils but that have a surface layer of silty clay loam, and soils that are similar to Frost soils but that have an alkaline layer in the upper part of the subsoil. The proportions of these soils vary from place to place. The extent of the soils that are similar to Frost soils is not large; therefore, they were not included in the name of the map unit.

A typical area of this map unit is about 70 percent Frost soils and 20 percent soils that are similar to Frost soils. Minor soils make up 10 percent of the map unit. These include Jeanerette and Patoutville soils. Spoil banks generally are on either side of the drainageways.

Typically, Frost soils have a surface layer of strongly acid, very dark grayish brown silt loam about 8 inches thick. The subsurface layer, to a depth of 25 inches, is very strongly acid, gray silt loam mottled with dark yellowish brown. The subsoil to a depth of 53 inches is strongly acid, gray silty clay loam mottled with yellowish brown. To a depth of 60 inches or more, it is neutral, gray silty clay loam mottled with yellowish brown.

Frost soils are moderate in fertility. Water and air move at a slow rate through the soil, and water runs off the surface at a slow rate. The seasonal high water table is perched above a depth of 3 feet and at times extends to the surface during December through April. The surface layer is wet for long periods in winter and spring. Plants suffer from lack of water during dry periods in summer and fall.

Most of the acreage is in woodland or is idle.

Potential as cropland is poor. The uneven surface interferes with tillage operations, and flooding limits the choice of crops. A suitable crop is soybeans. Potential as pastureland is fair. Suitable pasture plants include common bermudagrass and bahiagrass. These soils are friable and are somewhat easy to keep in good tilth. A surface drainage system is needed on cropland and pastureland to remove excess water from the surface. Proper management of crop residue helps maintain organic matter content and reduce soil losses by erosion. Most crops and pasture plants respond well to complete fertilizer. Lime is generally needed.

Potential for urban use is very poor. Wetness and flooding are limitations when these soils are used for septic tank absorption fields, sanitary landfills, homesites, and local roads and streets. Low strength is a limitation when the soil is used as foundations or construction material.

Potential for intensive recreation areas is poor. Wetness and flooding are the main limitations. Capability subclass IVw; woodland suitability group 2w9.

11—Gallion silt loam. This nearly level soil is on the very narrow natural levee of Bayou Vermilion on the alluvial plain in the eastern part of the parish. It formed in loamy alluvium. It is in areas of about 10 to 75 acres. Slopes are less than 1 percent.

Typically, the surface layer is slightly acid, brown silt loam about 7 inches thick. The subsoil to a depth of 19 inches is neutral, yellowish red silty clay loam. To a depth of 46 inches, it is moderately alkaline, yellowish red, stratified very fine sandy loam and silt loam. The underlying material, to a depth of 60 inches or more, is moderately alkaline, dark gray silty clay loam.

This soil is moderately high in fertility. Plant roots penetrate the soil easily, and water and air move at a moderate rate through the soil. Water runs off the surface at a slow rate. The soil is not wet. Typically, the seasonal high water table is at a depth of more than 6 feet; in places, however, it is at a depth of 4 to 6 feet during December through April. Sufficient water is available to plants in most years.

Included with this soil in mapping are a few small areas of Iberia and Baldwin soils.

Most of the acreage is in cropland, pastureland, and urban use.

Potential as cropland and pastureland is very good. The nearly level slopes and high fertility make this soil favorable for cultivated crops and pasture plants. The use of multirow equipment is restricted because in most places rows must be short.

The main suitable crops are soybeans, corn, sugarcane, grain sorghum, and truck crops. The main suitable pasture plants are common bermudagrass, bahiagrass, white clover, improved bermudagrass, and ryegrass. The soil is friable and easy to keep in good tilth. It can be worked over a wide range of moisture content. Traffic pans develop easily but can be broken up by deep plowing or chiseling. Land grading or smoothing improves surface drainage and increases the efficiency of farm equipment. Proper management of crop residue helps maintain organic matter content and reduce soil losses by erosion. Most crops and pasture plants respond well to complete fertilizers. Lime is generally not needed.

Potential for urban use and intensive recreation areas is good. Shrink-swell potential is a minor limitation when the soil is used as foundations or construction material. Capability class I; woodland suitability group 2o4.

12—**Iberia silty clay.** This nearly level soil is in broad areas on the natural levees of Bayou Teche on the alluvial plain in the eastern part of the parish. It formed in clayey alluvium. It is in areas of about 10 to 300 acres. Slopes are less than 1 percent.

Typically, the surface layer is neutral, very dark gray silty clay to a depth of 9 inches and neutral, black clay to a depth of 14 inches. The subsoil, to a depth of 47 inches, is moderately alkaline, gray clay mottled with olive yellow and yellowish brown. The underlying material, to a depth of 77 inches or more, is moderately alkaline, gray silty clay loam mottled with yellowish brown.

The soil is high in fertility. Plant roots penetrate the soil with some difficulty, and water and air move at a very slow rate through the soil. Water runs off the surface at a very slow rate. The seasonal high water table fluctuates between a depth of 2 feet and the surface during December through April. The soil swells when wet and shrinks and cracks when dry. The surface layer is wet for long periods in winter and spring. Plants suffer from lack of water during dry periods in summer and fall of some years.

Included with this soil in mapping are small areas of Baldwin and Sharkey soils.

Most of the acreage is in cropland and pastureland. A small acreage is in woodland.

Potential as cropland and pastureland is good. The nearly level slopes and high fertility make this soil favorable for cultivated crops; however, wetness and clayey texture are less favorable features for this use. The main suitable crops are rice, soybeans, sugarcane, and okra. The main suitable pasture plants are common bermudagrass, bahiagrass, dallisgrass, ryegrass, tall fescue, and white clover. This soil is difficult to keep in good tilth. It can be worked within only a narrow range of moisture content. Wetness can delay planting and harvesting. A drainage system is needed on cropland and pastureland. Land grading or smoothing improves surface drainage and increases the efficiency of farm equipment. Proper management of crop residue helps maintain organic matter content and reduce soil losses by erosion. Irrigation is needed for rice. Most crops and pasture plants respond well to complete fertilizer. Lime is generally not needed.

Potential for urban use is poor. Wetness is a limitation for such uses as septic tank absorption fields, sanitary landfills, homesites, and local roads and streets. High shrink-swell potential is a limitation to use as foundations or construction material.

Potential for intensive recreation areas is poor. Wetness and the clayey surface layer are limitations to such uses as playgrounds and golf courses. Capability subclass IIIw; woodland suitability group 2w6.

13—**Jeanerette silt loam.** This level to nearly level soil is in broad areas on the terrace upland in the western part of the parish. It formed in loess or mixed loess and alluvial sediments. It is in areas of about 20 to more than 1,000 acres. Slopes are less than 1 percent.

Typically, the surface layer is slightly acid, very dark gray silt loam about 9 inches thick. The subsoil to a depth of 16 inches is neutral, black silty clay loam. To a depth of 33 inches, it is moderately alkaline, dark grayish brown and grayish brown silty clay loam mottled with light olive brown, and to a depth of 60 inches or more, it is moderately alkaline, grayish brown silt loam mottled with yellowish brown.

This soil is high in fertility. Plant roots penetrate the soil easily, and water and air move at a moderatly slow rate through the soil. Water runs off the surface at a slow rate. The seasonal high water table fluctuates between depths of 1 and 2.5 feet during December through April. The surface layer is wet for significant periods in winter and spring. Sufficient water is available to plants in most years.

Included with this soil in mapping are a few small areas of Patoutville, Frost, Judice, and Crowley soils.

Most of the acreage is in cropland and pastureland. A small acreage is in urban uses. Rice is the main crop.

Potential for cropland and pastureland is very good. The level to nearly level slopes, high fertility, and loamy texture make this soil favorable for cultivated crops; however, wetness is a less favorable feature for this use. The main suitable crops are soybeans, rice, corn, sugarcane, and truck crops. The main suitable pasture plants are common bermudagrass, improved bermudagrass, white clover, ryegrass, bahiagrass, and dallisgrass. This soil is friable and easy to keep in good tilth. It can be worked over a somewhat wide range of moisture content. Traffic pans develop easily but can be broken up by deep plowing or chiseling. A surface drainage system is generally needed for most cultivated crops. Land grading or smoothing improves surface drainage and increases the efficiency of farm equipment. Proper management of crop residue helps maintain organic matter content and reduce soil losses by erosion. Most crops and pasture plants respond well to complete fertilizer. Lime is not needed.

Potential for urban use is fair. Wetness is a limitation to such uses as septic tank absorption fields, sanitary landfills, homesites, and local roads and streets. Low strength is a limitation to use as foundations or construction material.

Potential for intensive recreation areas is fair. Wetness is a limitation to such uses as playgrounds and golf courses. Capability subclass IIw; woodland suitability group 2w5.

14—Haplaquolls, occasionally flooded. These highly variable, occasionally flooded soils are in a long, narrow band at the base of the escarpment from the terrace upland to the alluvial plain at the eastern edge of the parish. These soils formed in sandy to clayey Mississippi River alluvial deposits and silty sediments washed from the terrace upland. They are in one tract of about 306 acres. Elevation ranges from 10 to 15 feet above sea level. Slopes are mainly less than 1 percent but range to as much as 2 percent in places.

Nearly one-fourth of the area is in water-filled pits from which sand has been mined. The rest of the area is in waste dumps, woodland, pastureland, and industrial sites.

Potential as cropland and pastureland is poor. Wetness, flooding, and the variable nature of the soils are limitations. Soybeans and grain sorghum are suitable crops, and common bermudagrass and bahiagrass are suitable pasture plants. Drainage is generally needed. The response of crops to fertilizer is variable because of the variable nature of the soils. Lime is generally not needed.

Potential for urban use and intensive recreation areas is poor. Flooding and the highly variable nature of the soils are the main limitations. Capability subclass IVw; not assigned to a woodland suitability group.

17—Memphis silt loam, 0 to 1 percent slopes. This nearly level soil is on broad stream divides on the terrace upland in the eastern part of the parish. It formed in loess. It is in areas of about 10 to 400 acres.

Typically the surface layer is medium acid, dark grayish brown silt loam about 8 inches thick. The subsoil to a depth of 18 inches is very strongly acid, dark yellowish brown silty clay loam. To a depth of 32 inches, it is strongly acid, dark brown silty clay loam, and to a depth of 53 inches, it is medium acid, dark brown silt loam. The underlying material, to a depth of 82 inches or more, is slightly acid, dark brown silt loam.

This soil is moderate in fertility. Plant roots penetrate the soil easily, and water and air move at a moderate rate through the soil. Water runs off the surface at a medium rate. This soil is not wet during any season. The seasonal high water table is at a depth of more than 6 feet. Sufficient water is available to plants in most years.

Included with this soil in mapping are a few small areas of Coteau and Frost soils.

Most of the acreage is in cropland, pastureland, and urban use. A large part of the urban development in the parish is on this soil.

Potential as cropland and pastureland is good. The nearly level slopes and loamy texture make this soil favorable for cultivated crops; however, moderate fertility is a less favorable feature for this use. The main suitable crops are sugarcane, soybeans, corn, sweet potatoes, grain sorghum, and truck crops. The main suitable pasture plants are common bermudagrass, bahiagrass, ryegrass, improved bermudagrass, white clover, vetch, southern wild winter peas, and annual lespedeza. This soil is friable and easy to keep in good tilth. It can be worked over a wide range of moisture content. Traffic pans form easily but can be broken up by deep plowing and chiseling. Proper management of crop residue helps maintain organic matter content and reduce soil losses by erosion. Land grading or smoothing improves surface drainage and increases the efficiency of farm equipment. Most crops and pasture plants respond well to complete fertilizer. Lime is generally needed.

Potential for urban use is good; low strength, however, is a limitation to some uses. This is considered the choice soil of the parish for most urban uses mainly because of the high elevation and consequent small chance of flooding; the good drainage; the loamy texture, which is easy to work; and the nearly level slopes.

Potential for intensive recreation areas is good. Good drainage, loamy texture, and nearly level slopes are favorable soil features (fig. 6). Capability class I; woodland suitability group 1o7.

18—Memphis silt loam, 1 to 5 percent slopes. This very gently sloping to gently sloping soil is on narrow stream divides on the terrace upland in the eastern part of the parish. It formed in loess. It is in areas of about 10 to 200 acres.

Typically, the surface layer is medium acid, brown silt loam about 6 inches thick. The subsoil to a depth of 36 inches is strongly acid, dark brown silty clay loam. To a depth of 64 inches or more, it is medium acid, dark brown silt loam.

This soil is moderate in fertility. Plant roots penetrate the soil easily, and water and air move at a moderate rate through the soil. Water runs off the surface at a medium to rapid rate. This soil is not wet during any season. The seasonal high water table is at a depth of more than 6 feet. Sufficient water is available to plants in most years.

Included with this soil in mapping are a few small areas of Coteau soils and Memphis soils that have slopes of more than 5 percent.

Most of the acreage is in cropland, pastureland, and urban uses.

Potential as cropland and pastureland is good (fig. 7). The loamy texture makes this soil favorable for cultivated crops; however, erosion is somewhat of a concern when the soil is bare. The main suitable crops are sugarcane, soybeans, corn, sweet potatoes, grain sorghum, and truck crops. The main suitable pasture plants are common bermudagrass, bahiagrass, ryegrass, improved bermudagrass, white clover, vetch, southern wild winter peas, and annual lespedeza. This soil is friable and easy to keep in good tilth. It can be worked over a wide range of moisture content. Traffic pans form easily but can be broken up by deep plowing and chiseling. Proper management of crop residue helps maintain organic matter content and reduce soil losses by erosion. Stripcropping or contour farming is needed on cropland to help reduce erosion. Most crops and pasture plants respond well to complete fertilizer. Lime is generally needed.

Potential for urban use is good; low strength, however, is a limitation to some uses.

Good surface drainage, loamy texture, and high elevations make this one of the choice soils in the parish for urban uses.

Potential for intensive recreation uses is good. Good drainage is a favorable soil feature. Capability subclass IIIe; woodland suitability group 1o7.

19—Memphis silt loam, 5 to 8 percent slopes. This moderately sloping soil is on side slopes on the terrace upland in the eastern part of the parish. It formed in loess. It is in areas of 10 to 50 acres.

Typically the surface layer is slightly acid, brown silt loam about 4 inches thick. The subsoil to a depth of 46 inches is strongly acid, dark brown silty clay loam. To a depth of 60 inches, it is slightly acid, dark brown silt loam.

This soil is moderate in fertility. Plant roots penetrate the soil easily, and water and air move at a moderate rate through the soil. Water runs off the surface at a rapid rate. This soil is not wet during any season. The seasonal high water table is at a depth of more than 6 feet. Plants suffer from lack of water during dry periods in summer and fall of some years.

Included with this soil in mapping are a few small areas of Memphis soils that have slopes of more than 8 percent and a few small areas of Memphis soils that have lost most of their original topsoil through erosion.

Most of the acreage is in pastureland. A small acreage is in urban uses and cropland.

Potential as cropland is fair, and potential as pastureland is good. The loamy texture makes this soil somewhat favorable for cultivated crops; because of slope, however, erosion is a concern when the soil is bare.

The main suitable crops are soybeans, sugarcane, sweet potatoes, grain sorghums, and truck crops. The main suitable pasture plants are common bermudagrass, bahiagrass, ryegrass, improved bermudagrass, southern wild winter peas, white clover, vetch, and annual lespedeza. This soil is friable and easy to keep in good tilth. It can be worked over a wide range of moisture content. Traffic pans form easily but can be broken up by deep plowing or chiseling. Slopes restrict the use of some farm equipment. Proper management of crop residue helps maintain organic matter content and reduce soil losses by erosion. Contour farming, terraces, or stripcropping is needed on cropland to help reduce erosion. Most crops and pasture plants respond well to complete fertilizer. Lime is generally needed.

Potential for urban use is good; low strength, however, is a limitation to use as foundations or construction material.

Potential for intensive recreation areas is good, but slope is a limitation to use for playgrounds. Capability subclass IIIw; woodland suitability group 1o7.

21—Judice silty clay loam. This level soil is on broad flats on the terrace upland in the western part of the parish. It formed in clayey alluvium. It is in areas of about 100 to more than 1,500 acres. Slopes are less than 0.5 percent.

Typically, the surface layer is neutral, very dark gray silty clay loam to a depth of 6 inches and moderately alkaline, black silty clay to a depth of 17 inches. The subsoil to a depth of 38 inches is moderately alkaline, dark gray silty clay mottled with yellowish brown. To a depth of 60 inches or more, it is moderately alkaline, light gray silty clay mottled with yellowish brown.

This soil is moderately high in fertility. Plant roots penetrate the soil with some difficulty, and water and air move at a very slow rate through the soil. Water runs off the surface at a very slow rate. The seasonal high water table fluctuates between a depth of 2 feet and the surface during December through April. The soil swells when wet and shrinks and cracks when dry. The surface layer is wet for long periods in winter and spring. This soil dries out more slowly than most of the adjoining soils at higher elevations. Sufficient water is available to plants in most years.

Included with this soil in mapping are small areas of Jeanerette and Mowata soils.

Most of the acreage is in cropland. A small acreage is used for crawfish ponds.

Potential as cropland and pastureland is fair. The level slopes and high fertility make this soil favorable for cultivated crops; however, wetness and clayey texture are less favorable features for this use. The main suitable crops are rice, sugarcane, and soybeans. The main suitable pasture plants are common bermudagrass, bahiagrass, dallisgrass, tall fescue, and white clover. This soil is difficult to keep in good tilth. It can be worked within only a narrow range of moisture content. Wetness can delay the planting and harvesting of cultivated crops and pasture plants. A drainage system is needed on cropland and pastureland. Land grading or smoothing improves surface drainage and increases the efficiency of farm equipment. Proper management of crop residue helps maintain organic matter content and reduce soil losses by erosion. Irrigation is needed for rice. Most crops and pasture plants respond well to complete fertilizer. Lime is generally not needed.

Potential for urban use is poor. Wetness is a limitation to such uses as septic tank absorption fields, sanitary landfills, homesites, and local roads and streets. High shrink-swell potential is a limitation to use as foundations or construction material.

Potential for intensive recreation areas is poor. Wetness is a limitation to such uses as playgrounds and golf courses. Capability subclass IIIw; woodland suitability group 2w9.

22—Mowata-Frost complex. This complex consists of small areas of Frost and Mowata soils that are so intermingled that they could not be separated at the scale selected for mapping. These soils are on broad flats on the terrace upland in the western part of the parish. They are in areas of 80 to 300 acres. These soils formed in mixed loess and alluvium. Slopes are less than 1 percent.

Mowata soils, in small, irregularly shaped swales, make up about 55 percent of each mapped area. Typically, the surface layer is neutral, dark gray silt loam about 8 inches thick. The subsurface layer, to a depth of 17 inches, is medium acid, gray silt loam mottled with brown. The subsoil to a depth of 35 inches is strongly acid, gray silty clay mottled with yellowish brown, and to a depth of 42 inches, it is medium acid, light brownish gray silty clay mottled with yellowish brown. The underlying layer is mildly alkaline, light olive gray silty clay loam mottled with yellowish brown.

This Mowata soil is moderate in fertility. Water and air move at a very slow rate through the soil. Plant roots penetrate the soil easily. Water runs off the surface at a slow rate. The seasonal high water table fluctuates between a depth of 2 feet and the surface during December through April. The surface layer is wet for long periods in winter and spring. The soil dries out more slowly than most of the adjoining soils at higher elevations. Sufficient water is available to plants in most years.

Frost soils, in small, irregularly shaped, nearly level areas at slightly higher elevations than Mowata soils, make up about 45 percent of each mapped area. Typically, the surface layer is slightly acid, dark gray silt loam about 7 inches thick. The subsurface layer, to a depth of 11 inches, is strongly acid, gray silt loam. The subsoil to a depth of 27 inches is very strongly acid, gray silty clay loam mottled with yellowish brown. To a depth of 40 inches, it is very strongly acid, olive gray silty clay loam mottled with brown, and to a depth of 60 inches or more, it is slightly acid, light brownish gray silt loam mottled with brown.

This Frost soil is moderate in fertility. Water and air move at a slow rate through the soil. Plant roots penetrate the soil easily. Water runs off the surface at a slow rate. The seasonal high water table fluctuates between a depth of 1.5 feet and the surface during December through April. The surface layer is wet for long periods in winter and spring. Sufficient water is available to plants in most years.

Included with these soils in mapping are a few small areas of Jeanerette soils at slightly higher elevations and Judice soils in the broad flats. Also included are small areas, in swales, of soils that are subject to flooding.

Most of the acreage is in cropland. A small acreage is in pastureland.

Potential as cropland and pastureland is fair. Soil wetness interferes with tillage operations. The main suitable crops are rice, soybeans, sweet potatoes, sugarcane, corn, and grain sorghum. The main suitable pasture plants are common bermudagrass, improved bermudagrass, bahiagrass, ryegrass, vetch, southern wild winter peas, and annual lespedeza. These soils are friable but somewhat difficult to keep in good tilth because of surface crusting. Traffic pans develop easily but can be broken up by deep plowing or chiseling. A surface drainage system is needed for most cultivated crops and pasture plants. Land grading or smoothing improves surface drainage and increases the efficiency of farm equipment. Proper management of crop residue helps maintain organic matter content, which in turn reduces surface crusting and soil loss by erosion. Irrigation is needed for rice. Most crops and pasture plants respond well to complete fertilizer. Lime is generally needed.

Potential for urban use is poor. Wetness is a limitation when the soil is used for septic tank absorption fields, sanitary landfills, homesites, and local roads and streets. Low strength is a limitation when the soil is used as foundations or construction material.

Potential for intensive recreation areas is poor. Wetness is the main limitation. Capability subclass IIIw; woodland suitability group 2w9.

23—Patoutville silt loam. This nearly level soil is on broad stream divides throughout most of the terrace upland. It formed in loess. It is in areas of about 10 to 600 acres. Slopes are less than 1 percent.

Typically, the surface layer is slightly acid, brown silt loam about 4 inches thick. The subsurface layer, to a depth of 10 inches, is slightly acid, dark grayish brown silt loam. The subsoil to a depth of 20 inches is neutral, dark grayish brown silty clay loam mottled with red. To a depth of 32 inches, it is neutral, grayish brown silty clay loam mottled with red and yellowish brown, and to a depth of 60 inches or more, it is mildly alkaline, gray silt loam mottled with yellowish brown.

This soil is moderate in fertility. Plant roots penetrate the soil easily, and water and air move at a slow rate through the soil. Water runs off the surface at a slow rate. The seasonal high water table fluctuates between depths of 2 and 3 feet during December through April. The surface layer is wet for significant periods in winter and spring. Sufficient water is available to plants in most years.

Included with this soil in mapping are a few small areas of Coteau, Frost, Jeanerette, and Crowley soils. Also included are small areas of Patoutville soils that have slopes of more than 1 percent.

Most of the acreage is in cropland and pastureland. A small acreage is in urban use.

Potential as cropland and pastureland is good. The nearly level slopes and loamy texture make this soil favorable for cultivated crops; however, wetness is a less favorable feature for this use. The main suitable crops are soybeans, sugarcane, grain sorghum, sweet potatoes, rice, and truck crops. The main suitable pasture plants are common bermudagrass, bahiagrass, ryegrass, improved bermudagrass, vetch, southern wild winter peas, and annual lespedeza. This soil is friable and easy to keep in good tilth. It can be worked over a fairly wide range of moisture content. Traffic pans develop easily but can be broken up by deep plowing or chiseling. A surface drainage system is generally needed for most cultivated crops. Land grading and smoothing improve surface drainage and increase the efficiency of farm equipment. Irrigation is needed for rice (fig. 8). Proper management of crop residue helps maintain organic matter content and reduce soil losses by erosion. Most crops and pasture plants respond well to complete fertilizer. Lime is generally needed.

Potential for urban use is fair. Wetness is a limitation to such uses as septic tank absorption fields, sanitary landfills, homesites, and local roads and streets. Low strength is a limitation to use as foundations or construction material.

Potential for intensive recreation areas is fair. Wetness is a limitation to such uses as playgrounds and golf courses. Capability subclass IIw; woodland suitability group 1w8.

24—Sharkey clay. This level soil is in broad areas adjacent to the natural level of Bayou Teche on the alluvial plain in the eastern part of the parish. It formed in clayey alluvium. It is in areas of about 20 to 300 acres. Slopes are less than 0.5 percent.

Typically, the surface layer is mildly alkaline, dark gray clay about 8 inches thick. The subsoil, to a depth of 45 inches, is moderately alkaline, gray clay mottled with shades of brown. The underlying material, to a depth of 60 inches or more, is moderately alkaline, gray clay mottled with yellowish brown.

This soil is high in fertility. Plant roots penetrate the soil with some difficulty, and water and air move at a very slow rate through the soil. Water runs off the surface at a slow rate. The seasonal high water fluctuates between a depth of 2 feet and the surface during December through April. The soil swells when wet and shrinks and cracks when dry. The surface layer is wet for long periods in winter and spring. Sufficient water is available to plants in most years.

Included with this soil in mapping are a few small areas of Iberia and Baldwin soils. Also included are small areas of soils, along Bayou Vermilion, that are similar to Sharkey soils but that are reddish brown.

Most of the acreage is in woodland and pastureland. A small acreage is in cropland.

Potential as cropland and pastureland is good. The level slopes and high fertility make this soil favorable for cultivated crops; however, wetness and clayey texture are less favorable features for this use. The main suitable crops are soybeans, sugarcane, grain sorghum, and rice. The main suitable pasture plants are common bermudagrass, bahiagrass, dallisgrass, ryegrass, tall fescue, southern wild winter pea, vetch, and white clover. This soil is difficult to keep in good tilth. It can be worked only within a narrow range of moisture content. Wetness can delay planting and harvesting. A drainage system is needed on cropland and pastureland. Land grading or smoothing improves surface drainage and increases the efficiency of farm equipment. Proper management of crop residue helps maintain organic matter content and reduce soil losses by erosion. Irrigation is needed for rice. Most crops other than legumes respond well to nitrogen fertilizer. Other fertilizers or lime generally are not needed.

Potential for urban use is poor. Wetness is a limitation to such uses as septic tank absorption fields, sanitary landfills, homesites, and local roads and streets. High shrink-swell potential is a limitation to use as foundations or construction material.

Potential for intensive recreation areas is poor. Wetness and high shrink-swell potential are limitations to use for playgrounds and golf courses. Capability subclass IIIw; woodland suitability group 2w6.

25—Sharkey clay, frequently flooded. This level soil is in broad areas at low elevations adjacent to the natural level of Bayou Teche on the alluvial plain in the eastern part of the parish. It formed in clayey alluvium. It is in areas of about 10 to 100 acres. Slopes are less than 0.5 percent. This soil is subject to frequent flooding by runoff from higher areas.

Typically, the surface layer is neutral, dark grayish brown clay about 3 inches thick. The subsoil to a depth of 12 inches is mildly alkaline, gray clay mottled with yellowish brown. To a depth of 46 inches, it is moderately alkaline, light brownish gray clay mottled with yellowish brown. The underlying material, to a depth of 60 inches or more, is moderately alkaline, gray clay mottled with yellowish brown.

This soil is high in fertility. Plant roots penetrate the soil with difficulty, and water and air move at a very slow rate through the soil. Water runs off the surface at a very slow rate. The soil is flooded with 1 to 3 feet of water once or more each year. During periods when the soil is not flooded, the seasonal high water table fluctuates between a depth of 2 feet and the surface. The soil swells when wet and shrinks and cracks when dry. Sufficient water is available to plants in most years.

Included with this soil in mapping are a few small areas of Iberia and Fausse soils.

Most of the acreage is in woodland. A very small acreage is in pastureland.

Potential as cropland is very poor, and potential as pastureland is poor. Flooding precludes use as cropland and restricts the choice of plants and the grazing time on pastureland. The main suitable pasture plants are common bermudagrass and bahiagrass.

Potential for urban use and intensive recreation areas is very poor. The hazard of flooding is difficult to overcome.

If flooding were controlled, however, this soil would have good potential as pastureland and cropland and poor potential for urban use and intensive recreation areas. Capability subclass Vw; woodland suitability group 3w6.

26—Udifluvents, loamy. These nearly level, dominantly loamy soils are adjacent to and on the inside bends of the Vermilion River from Lafayette to the southern boundary of the parish. These soils are made up of highly variable, dominantly loamy material that was pumped from the Vermilion River channel. The deposits range from silty clay loam to loamy fine sand. These soils are in areas of 15 to 65 acres. Slopes are generally less than 1 percent, but the surface is uneven and contains numerous small swales and potholes. Elevation ranges from 15 to 25 feet above sea level.

Included with these soils in mapping are numerous small areas of soils that are subject to flooding.

Most of the acreage is in woodland and urban use.

Potential as cropland and pastureland is poor. The small size of the areas, the variable nature of the soils, and the uneven surface interfere with tillage operations.

The main suitable crops are soybeans, truck crops, grain sorghum, and corn. The main suitable pasture plants are common bermudagrass, improved bermudagrass, bahiagrass, white clover, and ryegrass. These soils can be worked over a somewhat wide range of moisture content. A surface drainage system is generally needed. Land grading or smoothing improves surface drainage and increases the efficiency of farm equipment. Proper management of crop residue helps maintain organic matter content and reduce soil losses by erosion. Crop response to fertilizer is variable because of the variable nature of the soils. Lime is needed in places.

Potential for urban use is poor. These pumped materials are subject to settlement; therefore, pilings are generally required if building foundations are to be adequate.

Potential for intensive recreation areas is poor. The uneven surface and poor foundation material are limitations. Capability subclass IIIw; not assigned to a woodland suitability group.

Use and management of the soils

The soil survey is a detailed inventory and evaluation of the most basic resource of the survey area—the soil. It is useful in adjusting land use, including urbanization, to the limitations and potentials of natural resources and the environment. Also, it can help avoid soil-related failures in uses of the land.

While a soil survey is in progress, soil scientists, conservationists, engineers, and others keep extensive notes about the nature of the soils and about unique aspects of behavior of the soils. These notes include data on erosion, drought damage to specific crops, yield estimates, flooding, the functioning of septic systems, and other factors affecting the productivity, potential, and limitations of the soils under various uses and management. In this way, field experience and measured data on soil properties and performance are used as a basis for predicting soil behavior.

Information in this section is useful in planning use and management of soils for crops, pasture, and woodland, and as sites for buildings, highways and other transportation systems, sanitary facilities, parks and other recreation facilities, and wildlife habitat. From the data presented, the potential of each soil for specified land uses can be determined, soil limitations to these land uses can be identified, and costly failures in houses and other structures, caused by unfavorable soil properties, can be avoided. A site where soil properties are favorable can be selected, or practices that will overcome the soil limitations can be planned.

Planners and others using the soil survey can evaluate the impact of specific land uses on the overall productivity of the survey area or other broad planning area and on the environment. Productivity and the environment are closely related to the nature of the soil. Plans should maintain or create a land-use pattern in harmony with the natural soil.

Contractors can find information that is useful in locating sources of roadfill and topsoil.

Health officials, highway officials, engineers, and many other specialists also can find useful information in this soil survey. The safe disposal of wastes, for example, is closely related to properties of the soil. Pavements, sidewalks, campsites, playgrounds, lawns, and trees and shrubs are influenced by the nature of the soil.

Crops and pasture

M. DALE ROCKETT, conservation agronomist, Soil Conservation Service, helped write this section.

The major management concerns in the use of the soils for crops and pasture are described in this section. In addition, the system of land capability classification used by the Soil Conservation Service is explained and the estimated yields of selected crops and pasture plants are presented for each soil.

This section provides information about the overall agricultural potential of the survey area and about the management practices that are needed. The information is useful to equipment dealers, land improvement contractors, fertilizer companies, processing companies, planners, conservationists, and others. For each kind of soil, information about management is presented in the section "Soil maps for detailed planning." Planners of management systems for individual fields or farms should also consider the detailed information given in the description of each soil.

Specific recommendations for fertilizers, crop varieties, and seeding mixtures are not given. These change from time to time as more complete information is obtained. For more detailed information consult the local staff of the Soil Conservation Service, the Extension Service, or the Louisiana Agricultural Experiment Station.

About 149,000 acres in Lafayette Parish were used for crops and pasture in 1967, according to a conservation needs inventory published in 1969. Of this total, about 78,000 acres were used for crops, mainly soybeans, rice, and sugarcane, and more than 71,000 acres were used for pasture. Acreage in crops and pasture has gradually been decreasing as more and more land is used for urban development. The acreage in urban use has been growing at the rate of about 1,200 acres per year in the last decade.

Differences among the soils in such factors as fertility needs, erodibility, organic matter content, water available for plant growth, drainage needs, and flooding hazard result in differences in crop suitability and management needs. Each farm has its own soil pattern and, therefore, its own management concerns. Some principles of farm management procedures, however, apply only to specific soils and certain crops. This section of the survey presents the general principles of management which can be applied widely to the soils of Lafayette Parish.

The soils in Lafayette Parish range in reaction from strongly acid to moderately alkaline in the surface layer. Most soils that are used for crops are low in organic matter content and in available nitrogen. Sharkey soils generally need only nitrogen fertilizers for nonleguminous crops. Acy, Iberia, Jeanerette, and Judice soils generally do not need lime but do need phosphorus, potassium, and nitrogen for nonleguminous crops. The rest of the soils in the parish generally need a complete fertilizer for crops and pasture plants. Lime is also generally needed for pasture plants, although the Crowley soils that have been irrigated with alkaline water do not need lime. The amount of fertilizer needed depends on the crop to be grown, on past cropping history, on level of yield desired, and on the kind of soil. It should be determined on the basis of a laboratory analysis.

A soil sample for laboratory testing should consist of a single soil type and should represent no more than 10 acres. Aricultural agencies in the parish can supply detailed information and instructions on preparation of soil samples (*4*).

Organic matter is important as a source of nitrogen for crop growth. It is also important in increasing water intake rates, reducing surface crusting, reducing soil losses by erosion, and in promoting good tilth. With the exception of Jeanerette, Judice, and Iberia soils, the soils in Lafayette Parish are low in organic matter content.

The content of organic matter can be increased to a limited extent if plants that have extensive root systems and an abundance of foliage are grown, if plant residue is left on the surface, if manure is added, and if perennial grasses and legumes are grown in rotation with other crops. In this parish, residue from rice straw and sugarcane are important in maintaining organic matter content.

Soils need to be tilled only enough to prepare a seedbed and to control weeds. Excessive tillage usually destroys the structure of the soil. Some of the fine textured soils in the parish become cloddy if they are cultivated at a certain high moisture content. A compacted layer develops in the medium textured soils if they are plowed at the same depth for long periods or if they are plowed when wet. This compacted layer is generally known as a traffic pan or plowpan, and it develops just below plow depth. The rate of development of this compacted layer can be reduced by not plowing when the soil is wet and by varying the depths of plowing. Developed compacted layers can be broken up by subsoiling or chiseling. Subsoiling has not increased yields of sugarcane on silty soils of the terrace upland, according to USDA Handbook No. 417 (*27*).

Soils can be protected from heavy rains by using tillage implements that stir the surface but leave crop residue on or near the surface. This residue helps reduce surface crusting, slow runoff, increase infiltration, and control erosion.

Many of the soils in the parish need surface drainage to make them more suitable for crops. Many of the areas in the parish are drained by a gravity drainage system consisting of field drains (quarter drains), laterals (V-ditches), and main ditches. The success of these systems depends on the availability of outlets. Another method used to improve drainage in the parish is land grading or smoothing. This more recent approach to drainage consists of precision smoothing to a uniform grade. This practice creates larger and more uniformly shaped fields which are more adapted to the use of modern, multirow farm equipment.

There are numerous shallow, saucer-shaped depressions throughout the terrace upland. These depressions are locally known as "platins." They are about 1/2 acre to 3 acres in size and contain water most of the time. They are difficult to drain adequately.

In a good cropping system, the sequence of crops should be such that the soil is covered with vegetation as much of the year as possible. In this parish, rice is usually grown 1 year in 3 in rotation with pasture or soybeans. The organic matter content of the soil can be improved by properly using the residue of the rice plants. Three crops of sugarcane are generally obtained from each planting. After the third crop, the field is usually fallowed for 1 year or planted to soybeans.

A suitable cropping system varies with the needs of the farmer and the soil. Additional information on cropping systems can be obtained from the Soil Conservation Service, the Extension Service, or the Louisiana Agricultural Experiment Station.

Soil erosion is a major soil concern on some of the Memphis and Coteau soils when these soils are bare of a vegetative cover. Loss of the surface layer through erosion is damaging for two reasons. First, productivity is reduced as the surface layer is lost and part of the subsoil is incorporated into the plow layer. Second, soil erosion on farmland results in sedimentation in streams and rivers. Control of erosion minimizes sedimentation and improves the quality of water for municipal uses, for recreation, and for fish and wildlife.

Terraces, contouring, and contour stripcropping can be used to reduce soil loss. These practices are best adapated to soils that have smooth, uniform slopes. Terracing and stripcropping are not adapted to the production of sugarcane on these soils.

A cropping system that keeps a vegetative cover on the soil for extended periods is another effective method of controlling soil erosion. The control of erosion is not difficult on most soils of the parish because of their level and nearly level slopes. Nevertheless, sheet erosion is somewhat high on fallow, plowed fields and in newly constructed drainage ditches. Some gully erosion occurs at overfalls into drainage ditches. Sheet erosion can be reduced by maintaining a cover of vegetation or vegetative residue on the soil as much of the time as possible, by holding the number of times a crop is cultivated to a minimum, and by controlling weeds using methods other than fallow plowing. Newly constructed ditches should be seeded immediately after construction. Water control structures placed at overfalls into drainage ditches help control gully erosion.

Yields per acre

The average yields per acre that can be expected of the principal crops under a high level of management are shown in table 5. In any given year, yields may be higher or lower than those indicated in the table because of variations in climatic conditions or other climatic factors. Absence of an estimated yield indicates that the crop is not suited to or not commonly grown on the soil or that a given crop is not commonly irrigated.

The estimated yields were based mainly on the experience and records of farmers, conservationists, and extension agents. Results of field trials and demonstrations and available yield data from nearby parishes were also considered.

The yields were estimated assuming that the latest soil and crop management practices were used. Pasture yields were estimated for the most productive varieties of grasses suited to the climate and the soil. A few farmers may be obtaining average yields higher than those shown in table 5.

The management needed to achieve the indicated yields of the various crops depends on the kind of soil and the crop. Such management provides drainage, erosion control, and protection from flooding; the proper planting and seeding rates; suitable high-yielding crop varieties; appropriate tillage practices, including time of tillage and seedbed preparation and tilling when soil moisture is favorable; control of weeds, plant diseases, and harmful insects; favorable soil reaction and optimum levels of nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residues, barnyard manure, and green-manure crops; harvesting crops with the smallest possible loss; and timeliness of all fieldwork.

The estimated yields reflect the productive capacity of the soils for each of the principal crops. Yields are likely to increase as new production technology is developed. The productivity of a given soil compared with that of other soils, however, is not likely to change.

Crops other than those shown in table 5 are grown in the survey area, but estimated yields are not included because the acreage of these crops is small. The local offices of the Soil Conservation Service and the Cooperative Extension Service can provide information about the management concerns and productivity of the soils for these crops.

Capability classes and subclasses

Capability classes and subclasses show, in a general way, the suitability of soils for most kinds of field crops. The soils are classed according to their limitations when they are used for field crops, the risk of damage when they are used, and the way they respond to treatment. The grouping does not take into account major and generally expensive landforming that would change slope, depth, or other characteristics of the soils; does not take into consideration possible but unlikely major reclamation projects; and does not apply to rice, cranberries, horticultural crops, or other crops that require special management. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for rangeland, for forest trees, or for engineering purposes.

In the capability system, all kinds of soil are grouped at three levels: capability class, subclass, and unit. These levels are defined in the following paragraphs. A survey area may not have soils of all classes.

CAPABILITY CLASSES, the broadest groups, are designated by Roman numerals I through VIII. The numerals indicate progressively greater limitations and narrower choices for practical use; they are defined as follows:

Class I soils have few limitations that restrict their use.

Class II soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.

Class III soils have severe limitations that reduce the choice of plants, or that require special conservation practices, or both.

Class IV soils have very severe limitations that reduce the choice of plants, or that require very careful management, or both.

Class V soils are not likely to erode but have other limitations, impractical to remove, that limit their use.

Class VI soils have very severe limitations that make them generally unsuitable for cultivation.

Class VII soils have very severe limitations that make them unsuitable for cultivation.

Class VIII soils and landforms have limitations that nearly preclude their use for commercial crop production.

CAPABILITY SUBCLASSES are soil groups within one class; they are designated by adding a small letter, *e*, *w*, *s*, or *c*, to the class numeral, for example, IIe. The letter *e* shows that the main limitation is risk of erosion unless close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c*, used in only some parts of the United States, shows that the chief limitation is climate that is too cold or too dry.

In class I there are no subclasses because the soils of this class have few limitations. Class V contains only the subclasses indicated by *w*, *s*, or *c* because the soils in class V are subject to little or no erosion, though they have other limitations that restrict their use to pasture, rangeland, woodland, wildlife habitat, or recreation.

The capability subclass is identified in the description of each map unit in the section "Soil maps for detailed planning."

Woodland management and productivity

H. FORD FALLIN, woodland conservationist, Soil Conservation Service, helped write this section.

Lafayette Parish contains about 4,500 acres of woodland. Most of the woodland is on the alluvial plain in the extreme eastern part of the parish. About 48 percent of the acreage is subject to frequent flooding.

The main tree species are water tupelo, baldcypress, green ash, sugarberry, sweetgum, water oak, American elm, cedar elm, American sycamore, Eastern cottonwood, and persimmon. A number of trees grow along fence rows, ditchbanks, small drains, and odd areas on the terrace upland. The more common species are Chinese tallowtree, black cherry, water oak, live oak, roughleaf dogwood, sugarberry, black willow, and Hercules club. Also a number of pines have been planted on homesites, mostly in and around the city of Lafayette.

A few fairly good stands of commercial trees are produced in the woodlands of the parish. In 1971, according to the Fourteenth Progress Report of the Louisiana Forestry Commission, about 245,000 board feet of cypress, oak, and gum timber were harvested in the parish. The value of the wood products under present conditions, however, is far below its potential. Although many of the soils in the parish have good potential as woodland, their value as cropland and pastureland and for urban use precludes their use as woodland.

Table 6 contains information useful to woodland owners or forest managers planning use of soils for wood crops. Map unit symbols for soils suitable for wood crops are listed, and the ordination (woodland suitability) symbol for each soil is given. All soils bearing the same ordination symbol require the same general kinds of woodland management and have about the same potential productivity.

The first part of the *ordination symbol*, a number, indicates the potential productivity of the soils for important trees. The number 1 indicates very high productivity; 2, high; 3, moderately high; 4, moderate; and 5, low. The second part of the group, a letter, indicates the major kind of soil limitation. The letter *x* indicates stoniness or rockiness; *w*, excessive water in or on the soil; *t*, toxic substances in the soil; *d*, restricted root depth; *c*, clay in the upper part of the soil; *s*, sandy texture; *f*, high content of coarse fragments in the soil profile; and *r*, steep slopes. The letter *o* indicates insignificant limitations or restrictions. If a soil has more than one limitation, priority in placing the soil into a limitation class is in the following order: x, w, t, d, c, s, f, and r.

The third element in the symbol, a numeral, indicates the kind of trees for which the soils in the group are best suited and also indicates the severity of the hazard or limitation. The numerals 1, 2, and 3 indicate slight, moderate, and severe limitations, respectively, and suitability for needleleaf trees. The numerals 4, 5, and 6 indicate slight, moderate, and severe limitations, respectively, and suitability for broadleaf trees. The numerals 7, 8, 9 indicate slight, moderate, and severe limitations, respectively, and suitability for both needleleaf and broadleaf trees.

In table 6 the soils are also rated for a number of factors to be considered in management. *Slight*, *moderate*, and *severe* are used to indicate the degree of major soil limitations.

Ratings of the *erosion hazard* indicate the risk of loss of soil in well-managed woodland. The risk is *slight* if the expected soil loss is small, *moderate* if some measures are needed to control erosion during logging and road construction, and *severe* if intensive management or special equipment and methods are needed to prevent excessive loss of soil.

Ratings of *equipment limitation* reflect the characteristics and conditions of the soil that restrict use of the equipment generally needed in woodland management or harvesting. A rating of *slight* indicates that use of equipment is not limited to a particular kind of equipment or time of year; *moderate* indicates a short seasonal limitation or a need for some modification in management or equipment; *severe* indicates a seasonal limitation, a need for special equipment or management, or a hazard in the use of equipment.

Seedling mortality ratings indicate the degree that the soil affects expected mortality of planted tree seedlings when plant competition is not a limiting factor. Seedlings from good planting stock that are properly planted during a period of sufficient rainfall are rated. A rating of *slight* indicates that the expected mortality of the planted seedlings is less than 25 percent; *moderate*, 25 to 50 percent; and *severe*, more than 50 percent.

The *potential productivity* of merchantable or *important trees* on a soil is expressed as a *site index*. This index is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. Important trees are those that woodland managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability.

Trees to plant are those that are suitable for commercial wood production and that are suited to the soils.

Engineering

This section provides information about the use of soils for building sites, sanitary facilities, construction material, and water management. Among those who can benefit from this section are engineers, landowners, community planners, town and city managers, land developers, builders, contractors, and farmers and ranchers.

The ratings in the engineering tables are based on test data and estimated data in the "Soil properties" section. The ratings were determined jointly by soil scientists and engineers of the Soil Conservation Service using known relationships between the soil properties and the behavior of soils in various engineering uses.

Among the soil properties and site conditions identified by a soil survey and used in determining the ratings in this section were grain-size distribution, liquid limit, plasticity index, soil reaction, soil wetness, depth to a seasonal high water table, slope, likelihood of flooding, natural soil structure or aggregation, in-place soil density, and geologic origin of the soil material. Where pertinent, data about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kind of absorbed cations were also considered.

On the basis of information assembled about soil properties, ranges of values can be estimated for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, shear strength, compressibility, slope stability, and other factors of expected soil behavior in engineering uses. As appropriate, these values can be applied to each major horizon of each soil or to the entire profile.

These factors of soil behavior affect construction and maintenance of roads, airport runways, pipelines, foundations for small buildings, ponds and small dams, irrigation projects, drainage systems, sewage and refuse disposal systems, and other engineering works. The ranges of values can be used to: (1) select potential residential, commercial, industrial, and recreational uses; (2) make preliminary estimates pertinent to construction in a particular area; (3) evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; (4) evaluate alternative sites for location of sanitary landfills, onsite sewage disposal systems, and other waste disposal facilities; (5) plan detailed onsite investigations of soils and geology; (6) find sources of clay and topsoil; (7) plan farm drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; (8) relate performance of structures already built to the properties of the kinds of soil on which they are built so that performance of similar structures on the same or a similar soil in other locations can be predicted; and (9) predict the trafficability of soils for cross-country movement of vehicles and construction equipment.

Data presented in this section are useful for land-use planning and for choosing alternative practices or general designs that will overcome unfavorable soil properties and minimize soil-related failures. Limitations to the use of these data, however, should be well understood. First, the data are generally not presented for soil material below a depth of 5 or 6 feet. Also, because of the scale of the detailed map in this soil survey, small areas of soils that differ from the dominant soil may be included in mapping. Thus, these data do not eliminate the need for onsite investigations, testing, and analysis by personnel having expertise in the specific use contemplated.

The information is presented mainly in tables. Table 7 shows, for each kind of soil, the degree and kind of limitations for building site development; table 8 for sanitary facilities; and table 10 for water management. Table 9 shows the suitability of each kind of soil as a source of construction materials.

The information in the tables, along with the soil map, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations and to construct interpretive maps for specific uses of land.

Some of the terms used in this soil survey have a special meaning in soil science. Many of these terms are defined in the Glossary.

Building site development

The degree and kind of soil limitations that affect shallow excavations, dwellings with and without basements, small commercial buildings, and local roads and streets are indicated in table 7. A *slight* limitation indicates that soil properties are favorable for the specified use; any limitation is minor and easily overcome. A *moderate* limitation indicates that soil properties and site features are unfavorable for the specified use, but the limitations can be overcome or minimized by special planning and design. A *severe* limitation indicates one or more soil properties or site features so unfavorable or difficult to overcome that a major increase in construction effort, special design, or intensive maintenance is required. For some soils rated severe, such costly measures may not be feasible.

Shallow excavations are used for pipelines, sewerlines, communications and power transmission lines, basements, open ditches, and cemetery plots. Such digging or trenching is influenced by the soil wetness of a high seasonal water table, the texture and consistence of soils, and the tendency of soils to cave in or slough. In addition, excavations are affected by the probability of flooding. Ratings do not apply to soil horizons below a depth of 6 feet unless otherwise noted.

Dwellings and *small commercial buildings* referred to in table 7 are built on undisturbed soil and have foundation loads of a dwelling no more than three stories high. For such structures, soils should be sufficiently stable that cracking or subsidence of the structure from settling or shear failure of the foundation does not occur. These ratings were determined from estimates of the shear strength, compressibility, and shrink-swell potential of the soil. Soil texture, plasticity and in-place density, soil wetness, and depth to a seasonal high water table were also considered. Soil wetness and depth to a seasonal high water table indicate potential difficulty in providing adequate drainage for basements, lawns, and gardens. Slope is also an important consideration in the choice of sites for these structures and was considered in determining the ratings. Susceptibility to flooding is a serious hazard.

Local roads and streets referred to in table 7 have an all-weather surface that can carry light to medium traffic all year. They consist of a subgrade of the underlying soil material; a base of gravel, crushed rock fragments, or soil material stabilized with lime or cement; and a flexible or rigid surface, commonly asphalt or concrete. The roads are graded with soil material at hand, and most cuts and fills are less than 6 feet deep.

The load supporting capacity and the stability of the soil as well as the quantity and workability of fill material available are important in design and construction of roads and streets. The classifications of the soil and the soil texture, density, and shrink-swell potential are indicators of the traffic supporting capacity used in making the ratings. Soil wetness and flooding affect stability and ease of excavation.

Sanitary facilities

Favorable soil properties and site features are needed for proper functioning of septic tank absorption fields, sewage lagoons, and sanitary landfills. The nature of the soil is important in selecting sites for these facilities and in identifying limiting soil properties and site features to be considered in design and installation. Also, those soil properties that affect ease of excavation or installation of these facilities will be of interest to contractors and local officials. Table 8 shows the degree and kind of limitations of each soil for such uses and for use of the soil as daily cover for landfills. It is important to observe local ordinances and regulations.

If the degree of soil limitation is expressed as *slight*, soils are generally favorable for the specified use and limitations are minor and easily overcome; if *moderate*, soil properties or site features are unfavorable for the specified use, but limitations can be overcome by special planning and design; and if *severe*, soil properties or site features are so unfavorable or difficult to overcome that major soil reclamation, special designs, or intensive maintenance is required.

Septic tank absorption fields are subsurface systems of tile or perforated pipe that distribute effluent from a septic tank into the natural soil. Only the soil horizons between depths of 18 and 72 inches are evaluated for this use. The soil properties and site features considered are those that affect the absorption of the effluent and those that affect the construction of the system.

Properties and features that affect absorption of the effluent are permeability, depth to seasonal high water table, and susceptibility to flooding.

On many of the soils that have moderate or severe limitations for use as septic tank absorption fields, a system to lower the seasonal water table could be installed or the size of the absorption field could be increased so that performance is satisfactory.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons have a nearly level floor and cut slopes or embankments of compacted soil material. Aerobic lagoons generally are designed to hold sewage within a depth of 2 to 5 feet. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. Unless the soil has very slow permeability, contamination of ground water is a hazard where the seasonal high water table is above the level of the lagoon floor. In soils where the water table is seasonally high, seepage of ground water into the lagoon can seriously reduce the lagoon's capacity for liquid waste. Slope and susceptibility to flooding also affect the suitability of sites for sewage lagoons or the cost of construction. Shear strength and permeability of compacted soils affect the performance of embankments.

Sanitary landfill refers to a method of disposing of solid waste by placing refuse in successive layers either in excavated trenches or on the surface of the soil. The waste is spread, compacted, and covered daily with thin layers of soil. Landfill areas are subject to heavy vehicular traffic. Risk of polluting ground water and trafficability affect the suitability of a soil for this use. The best soils have a loamy or silty texture, have moderate to slow permeability, are deep to a seasonal water table, and are not subject to flooding. Clayey soils are likely to be sticky and difficult to spread. Soil wetness may be a limitation because operating heavy equipment on a wet soil is difficult. Seepage into the refuse increases the risk of pollution of ground water.

In the trench type of landfill, ease of excavation also affects the suitability of a soil for this purpose. If the seasonal water table is high, water seeps into trenches and causes problems in filling.

Unless otherwise stated, the limitations in table 8 apply only to the soil material within a depth of about 6 feet. If the trench is deeper, a limitation of slight or moderate may not be valid. Site investigation is needed before a site is selected.

In the area type of sanitary landfill, refuse is placed on the surface of the soil and covered daily with topsoil. The limitations caused by soil texture, depth to bedrock, and content of stones do not apply to this type of landfill. Soil wetness, however, can be a limitation because of difficulty in operating equipment.

Daily cover for landfill should be soil that is easy to excavate and spread over the compacted fill in wet and dry periods. Soils that are loamy or silty are better than other soils. Clayey soils may be sticky and difficult to spread.

The soils selected for final cover of landfills should be suitable for growing plants. Of all the horizons, the A horizon in most soils has the best workability, more organic matter, and the best potential for growing plants. Thus, for either the area- or trench-type landfill, stockpiling material from the A horizon for use as the surface layer of the final cover is desirable.

Where it is necessary to bring in soil material for daily or final cover, thickness of suitable soil material available and depth to a seasonal high water table in soils surrounding the sites should be evaluated. Other factors to be evaluated are those that affect reclamation of the borrow areas. These factors include slope, erodibility, and potential for plant growth.

Construction materials

The suitability of each soil as a source of roadfill, sand, gravel, and topsoil is indicated in table 9 by ratings of good, fair, or poor. The texture, thickness, and organic-matter content of each soil horizon are important factors in rating soils for use as construction materials. Each soil is evaluated to the depth observed, generally about 6 feet.

Roadfill is soil material used in embankments for roads. Soils are evaluated as a source of roadfill for low embankments, which generally are less than 6 feet high and less exacting in design than high embankments. The ratings reflect the ease of excavating and working the material and the expected performance of the material where it has been compacted and adequately drained. The performance of soil after it is stabilized with lime or cement is not considered in the ratings, but information about some of the soil properties that influence such performance is given in the descriptions of the soil series.

The ratings apply to the soil material between the A horizon and a depth of 5 to 6 feet. It is assumed that soil horizons will be mixed during excavation and spreading. Many soils have horizons of contrasting suitability within their profile. The estimated engineering properties in table 13 provide specific information about the nature of each horizon. This information can help determine the suitability of each horizon for roadfill.

Soils rated *good* are coarse grained. They have low shrink-swell potential. They are at least moderately well drained. Soils rated *fair* have a plasticity index of less than 15 and have other limiting features, such as moderate shrink-swell potential or wetness.

Sand and *gravel* are used in great quantities in many kinds of construction. The ratings in table 9 provide guidance as to where to look for probable sources. Fine-grained soils are not suitable sources of sand and gravel. All soils in Lafayette Parish are fine grained; therefore, all soils in the parish are unsuited.

Topsoil is used in areas where vegetation is to be established and maintained. Suitability is affected mainly by the ease of working and spreading the soil material in preparing a seedbed and by the ability of the soil material to support plantlife. Also considered is the damage that can result at the area from which the topsoil is taken.

The ease of excavation is influenced by the thickness of suitable material and wetness. The ability of the soil to support plantlife is determined by texture, structure, and the amount of soluble salts or toxic substances. Organic matter in the A1 or Ap horizon greatly increases the absorption and retention of moisture and nutrients. Therefore, the soil material from these horizons should be carefully preserved for later use.

Soils rated *good* have at least 16 inches of friable loamy material at their surface. They have gentle slopes. They are low in soluble salts that can limit or prevent plant growth. They are naturally fertile or respond well to fertilizer. They are not so wet that excavation is difficult during most of the year.

Soils rated *fair* are firm, loamy soils that contain appreciable amounts of clay.

Soils rated *poor* are very firm, clayey soils and poorly drained or very poorly drained soils.

Water management

Many soil properties and site features that affect water management practices have been identified in this soil survey. In table 10 the degree of soil limitation and soil and site features that affect use are indicated for each kind of soil. This information is significant in planning, installing, and maintaining water control structures.

Soil and site limitations are expressed as slight, moderate, and severe. *Slight* means that the soil properties and site features are generally favorable for the specified use and that any limitation is minor and easily overcome. *Moderate* means that some soil properties or site features are unfavorable for the specified use but can be overcome or modified by special planning and design. *Severe* means that the soil properties and site features are so unfavorable and so difficult to correct or overcome that major soil reclamation, special design, or intensive maintenance is required.

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have a low seepage potential, which is determined by permeability.

Embankments, dikes, and levees require soil material that is resistant to seepage, erosion, and piping and has favorable stability, shrink-swell potential, shear strength, and compaction characteristics.

Drainage of soil is affected by such soil properties as permeability, texture, depth to bedrock, hardpan, or other layers that affect the rate of water movement, depth to the water table, slope, stability of ditchbanks, susceptibility to flooding, and availability of outlets for drainage.

Irrigation is affected by such features as slope, susceptibility to flooding, hazard of water erosion, texture, rate of water intake at the surface, permeability of the soil below the surface layer, available water capacity, need for drainage, and depth to the water table.

Terraces and diversions are embankments or a combination of channels and ridges constructed across a slope to intercept runoff. They allow water to soak into the soil or flow slowly to an outlet. Features that affect suitability of a soil for terraces are uniformity and steepness of slope; permeability; ease of establishing vegetation; and resistance to water erosion.

Grassed waterways are constructed to channel runoff to outlets at a nonerosive velocity. Features that affect the use of soils for waterways are slope, permeability, erodibility, wetness, and suitability for permanent vegetation.

Recreation

The soils of the survey area are rated in table 11 according to limitations that affect their suitability for recreation uses. The ratings are based on such restrictive soil features as flooding, wetness, slope, and texture of the surface layer. Not considered in these ratings, but important in evaluating a site, are location and accessibility of the area, size and shape of the area and its scenic quality, the ability of the soil to support vegetation, access to water, potential water impoundment sites available, and either access to public sewerlines or capacity of the soil to absorb septic tank effluent. Soils subject to flooding are limited, in varying degree, for recreation use by the duration and intensity of flooding and the season when flooding occurs. Onsite assessment of height, duration, intensity, and frequency of flooding is essential in planning recreation facilities.

The degree of the limitation of the soils is expressed as slight, moderate, or severe. *Slight* means that the soil properties are generally favorable and that the limitations are minor and easily overcome. *Moderate* means that the limitations can be overcome or alleviated by planning, design, or special maintenance. *Severe* means that soil properties are unfavorable and that limitations can be offset only by costly soil reclamation, special design, intensive maintenance, limited use, or by a combination of these measures.

The information in table 11 can be supplemented by information in other parts of this survey. Especially helpful are interpretations for septic tank absorption fields, given in table 8, and interpretations for dwellings without basements and for local roads and streets, given in table 7.

Camp areas require such site preparation as shaping and leveling for tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The best soils for this use have mild slopes and are not wet or subject to flooding during the period of use. The surface absorbs rainfall readily but remains firm.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The best soils for use as picnic areas are firm when wet and are not subject to flooding during the period of use.

Playgrounds require soils that can withstand intensive foot traffic. The best soils are almost level and are not wet or subject to flooding during the season of use. The surface is firm after rains (fig. 9).

Paths and trails for walking, horseback riding, bicycling, and other uses should require little or no cutting and filling. The best soils for this use are those that are not wet, are firm after rains and are not subject to flooding more than once during the annual period of use.

Wildlife habitat

E. RAY SMITH, JR., biologist, Soil Conservation Service, helped write this section.

The wildlife populations of Lafayette Parish are of medium to low density. The relatively low populations of wildlife can be attributed to the lack of suitable habitat. The woodland area of this parish is only about 4,500 acres, and some of this is scattered over the parish in relatively small blocks. The farmland in Layafette Parish is devoted primarily to pasture, rice, soybeans, and sugarcane. Sugarcane is the only crop that furnishes much cover for wildlife.

The highest population of game birds and animals are those associated with open land—doves, cottontail rabbits, bobwhite quail, and common snipe.

While a few doves live year round in the parish, most doves are migratory birds which spend fall and winter in the area. The migratory birds are attracted to harvested rice fields in the parish. Rice is one of their choice foods. In some years dove populations are quite high.

Bobwhite quail and cottontail rabbits maintain moderate populations but are limited by the lack of suitable cover on the farmland. The common snipe are migratory birds, and their numbers vary according to the rainfall pattern and acreage of rice fields that have been flooded. They are sometimes very abundant during wet years.

Woodland game animals and birds, such as deer, squirrels, swamp rabbits, wood ducks, and woodcock are relatively scarce primarily because the acreage of woodland is small. Ducks have a moderate population in this parish during winter. A few wood ducks and fulvous tree ducks live in the parish year round, but their numbers are small. The migratory birds are attracted to flooded rice fields. Rice is one of their favorite foods, and a harvested field flooded to a shallow depth is very attractive to them. Very few geese migrate to this parish during fall and winter.

Nongame animals and birds also have low populations in this parish. Their numbers, too, are affected by the lack of suitable habitat. Some species of birds, however, particular grackles, redwing blackbirds, starlings, cowbirds, and a few others are abundant locally during late fall, winter, and early spring. Lack of suitable habitat also affects the furbearing species (raccoon, fox, mink, nutria, and skunk), keeping their populations at a minimum.

The fishery of Lafayette Parish is poor. There are no large lakes and only 145 farm ponds. The few streams in the parish, such as the Vermilion River, are polluted to the point that they do not maintain an acceptable fishery. The farm ponds furnish a moderate amount of fishing for bass, bluegills, and channel catfish.

Soils directly affect the kind and amount of vegetation that is available to wildlife as food and cover, and they affect the construction of water impoundments. The kind and abundance of wildlife that populate an area depend largely on the amount and distribution of food, cover, and water. If any one of these elements is missing, inadequate, or inaccessible, wildlife either are scarce or do not inhabit the area.

If the soils have the potential, wildlife habitat can be created or improved by planting appropriate vegetation, by maintaining the existing plant cover, or by helping the natural establishment of desirable plants.

In table 12, the soils in the survey area are rated according to their potential to support the main kinds of wildlife habitat in the area. This information can be used in planning for parks, wildlife refuges, nature study areas, and other developments for wildlife; selecting areas that are suitable for wildlife; selecting soils that are suitable for creating, improving, or maintaining specific elements of wildlife habitat; and determining the intensity of management needed for each element of the habitat.

The potential of the soil is rated good, fair, poor, or very poor. A rating of *good* means that the element of wildlife habitat or the kind of habitat is easily created, improved, or maintained. Few or no limitations affect management, and satisfactory results can be expected if the soil is used for the designated purpose. A rating of *fair* means that the element of wildlife habitat or kind of habitat can be created, improved, or maintained in most places. Moderately intensive management is required for satisfactory results. A rating of *poor* means that limitations are severe for the designated element or kind of wildlife habitat. Habitat can be created, improved, or maintained in most places, but management is difficult and must be intensive. A rating of *very poor* means that restrictions for the element of wildlife habitat or kind of wildlife are very severe, and that unsatisfactory results can be expected. Wildlife habitat is impractical or even impossible to create, improve, or maintain on soils having such a rating.

The elements of wildlife habitat are briefly described in the following paragraphs.

Grain and seed crops are seed-producing annuals used by wildlife. Examples are corn, grain sorghum, wheat, oats, millet, cowpeas, soybeans, and sunflowers. The major soil properties that affect the growth of grain and seed crops are texture of the surface layer, available water capacity, wetness, and flood hazard. Soil temperature and soil moisture are also considerations.

Grasses and legumes are domestic perennial grasses and herbaceous legumes that are planted for wildlife food and cover. Examples are fescue, ryegrass, clover, and vetch. Major soil properties that affect the growth of grasses and legumes are texture of the surface layer, available water capacity, wetness, and flood hazard. Soil temperature and soil moisture are also considerations.

Wild herbaceous plants are native or naturally established grasses and forbs, including weeds, that provide food and cover for wildlife. Examples are bluestem, panicums, paspalums, goldenrod, beggarweed, pokeweed, partridgepea, and fescue. Major soil properties that affect the growth of these plants are texture of the surface layer, available water capacity, wetness, and flood hazard. Soil temperature and soil moisture are also considerations.

Hardwood trees and the associated woody understory provide cover for wildlife and produce nuts or other fruit, buds, catkins, twigs, bark, or foliage that wildlife eat. Examples of native plants are oak, cherry, sweetgum, hawthorn, dogwood, persimmon, sassafras, sumac, blackberry, grape, blackhaw, vibernum, and briers. Examples of fruit-producing shrubs that are commercially available and suitable for planting on soils rated good are autumn-olive and crabapple. Major soil properties that affect growth of hardwood trees and shrubs are available water capacity and wetness.

Coniferous plants are cone-bearing trees, shrubs, or ground cover plants that furnish habitat or supply food in the form of browse, seeds, or fruitlike cones. Examples are pine and cedar. Soil properties that have a major effect on the growth of coniferous plants are available water capacity and wetness.

Wetland plants are annual and perennial wild herbaceous plants that grow on moist or wet sites, exclusive of submerged or floating aquatics. They produce food or cover for wildlife that use wetland as habitat. Examples of wetland plants are smartweed, wild millet, wildrice, and cordgrass and cattails, rushes, sedges, and reeds. Major soil properties affecting wetland plants are texture of the surface layer, wetness, reaction, and slope.

Shallow water areas are bodies of water that have an average depth of less than 5 feet and that are useful to wildlife. They can be naturally wet areas, or they can be created by dams or levees or by water-control structures in marshes or streams. Examples are marshes, waterfowl feeding areas, and ponds. Major soil properties affecting shallow water areas are wetness, slope, and permeability. The availability of a dependable water supply is important if water areas are to be developed.

The kinds of wildlife habitat are briefly described in the following paragraphs.

Openland habitat consists of cropland, pasture, meadows, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants. The kinds of wildlife attracted to these areas include bobwhite quail, dove, robin, meadowlark, field sparrow, killdeer, cottontail rabbit, and red fox.

Woodland habitat consists of areas of hardwoods or conifers, or a mixture of both, and associated grasses, legumes, and wild herbaceous plants. Wildlife attracted to these areas include wild turkey, wood duck, woodcock, thrushes, vireos, woodpeckers, squirrels, grey fox, raccoon, deer, and swamp rabbit.

Wetland habitat consists of open, marshy or swampy, shallow-water areas where water-tolerant plants grow. Some of the wildlife attracted to such areas are ducks, geese, herons, shore birds, mink, and nutria.

Soil properties

Extensive data about soil properties are summarized on the following pages. The two main sources of these data are the many thousands of soil borings made during the course of the survey and the laboratory analyses of selected soil samples from typical profiles.

In making soil borings during field mapping, soil scientists can identify several important soil properties. They note the seasonal soil moisture condition or the presence of free water and its depth. For each horizon in the profile, they note the thickness and color of the soil material; the texture, or amount of clay, silt, and sand; the structure, or the natural pattern of cracks and pores in the undisturbed soil; and the consistence of the soil material in place under the existing soil moisture conditions. They record the depth of plant roots, determine the pH or reaction of the soil, and identify any free carbonates.

Samples of soil material are analyzed in the laboratory to verify the field estimates of soil properties and to determine all major properties of key soils, especially properties that cannot be estimated accurately by field observation. Laboratory analyses are not conducted for all soil series in the survey area, but laboratory data for many soil series not tested are available from nearby survey areas.

The available field and laboratory data are summarized in tables. The tables give the estimated range of engineering properties, the engineering classification, and the physical and chemical properties of each major horizon of each soil in the survey area. They also present pertinent soil and water features, and engineering test data.

Engineering properties

Table 13 gives estimates of engineering properties and classifications for the major horizons of each soil in the survey area.

Most soils have, within the upper 5 or 6 feet, horizons of contrasting properties. Table 13 gives information for each of these contrasting horizons in a typical profile. *Depth* to the upper and lower boundaries of each horizon is indicated. More information about the range in depth and about other properties in each horizon is given for each soil series in the section "Soil series and morphology."

Texture is described in table 13 in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in soil material that is less than 2 millimeters in diameter. "Loam," for example, is soil material that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand.

The two systems commonly used in classifying soils for engineering use are the Unified Soil Classification System (Unified) (*2*) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO) (*1*).

The *Unified* system classifies soils according to properties that affect their use as construction material. Soils are classified according to grain-size distribution of the fraction less than 3 inches in diameter, plasticity index, liquid limit, and organic-matter content. Soils are grouped into 15 classes—eight classes of coarse-grained soils, identified as GW, GP, GM, GC, SW, SP, SM, and SC; six classes of fine-grained soils, identified as ML, CL, OL, MH, CH, and OH; and one class of highly organic soils, identified as Pt. Soils on the borderline between two classes have a dual classification symbol, for example, CL-ML.

The *AASHTO* system classifies soils according to those properties that affect their use in highway construction and maintenance. In this system a mineral soil is classified in one of seven basic groups ranging from A-1 through A-7 on the basis of grain-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines. At the other extreme, in group A-7, are fine-grained soils. Highly organic soils are classified in group A-8 on the basis of visual inspection.

When laboratory data are available, the A-1, A-2, and A-7 groups are further classified as follows: A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, and A-7-6. As an additional refinement, the desirability of soils as subgrade material can be indicated by a group index number. These numbers range from 0 for the best subgrade material to 20 or higher for the poorest. The AASHTO classification for soils tested in the survey area, with group index numbers in parentheses, is given in table 15. The estimated classification, without group index numbers, is given in table 13.

Percentage of the soil material less than 3 inches in diameter that passes three sieves (U.S. Standard) is estimated for each major horizon. The estimates are based on tests of soils that were sampled in the survey area and in nearby areas and on field estimates from many borings made during the survey.

Liquid limit and *plasticity index* indicate the effect of water on the strength and consistence of soil. These indexes are used in both the Unified and AASHTO soil classification systems. They are also used as indicators in making general predictions of soil behavior. Range in liquid limit and plasticity index are estimated on the basis of test data from the survey area or from nearby areas and on observations of the many soil borings made during the survey.

In some surveys, the estimates are rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterburg limits extend a marginal amount across classification boundaries (1 or 2 percent), the classification in the marginal zone is omitted in table 13.

Physical and chemical properties

Table 14 shows estimated values for several soil characteristics and features that affect behavior of soils in engineering uses. These estimates are given for each major horizon, at the depths indicated, in the typical pedon of each soil. The estimates are based on field observations and on test data for these and similar soils.

Permeability is estimated on the basis of known relationships among the soil characteristics observed in the field—particularly soil structure, porosity, and gradation or texture—that influence the downward movement of water in the soil. The estimates are for vertical water movement when the soil is saturated. Not considered in the estimates is lateral seepage or such transient soil features as plowpans and surface crusts. Permeability of the soil is an important factor to be considered in planning and designing drainage systems, in evaluating the potential of soils for septic tank systems and other waste disposal systems, and in many other aspects of land use and management.

Available water capacity is rated on the basis of soil characteristics that influence the ability of the soil to hold water and make it available to plants. Important characteristics are content of organic matter, soil texture, and soil structure. Shallow-rooted plants are not likely to use the available water from the deeper soil horizons. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design of irrigation systems.

Soil reaction is expressed as a range in pH values. The range in pH of each major horizon is based on many field checks. For many soils, the values have been verified by laboratory analyses. Soil reaction is important in selecting the crops, ornamental plants, or other plants to be grown; in evaluating soil amendments for fertility and stabilization; and in evaluating the corrosivity of soils.

Shrink-swell potential depends mainly on the amount and kind of clay in the soil. Laboratory measurements of the swelling of undisturbed clods were made for many soils. For others the swelling was estimated on the basis of the kind and amount of clay in the soil and on measurements of similar soils. The size of the load and the magnitude of the change in soil moisture content also influence the swelling of soils. Shrinking and swelling of some soils can cause damage to building foundations, basement walls, roads, and other structures unless special designs are used. A high or very high shrink-swell potential indicates that special design and added expense may be required if the planned use of the soil will not tolerate large volume changes.

Risk of corrosion pertains to potential soil-induced chemical action that dissolves or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to soil moisture, particle-size distribution, total acidity, and electrical conductivity of the soil material. The rate of corrosion of concrete is based mainly on the sulfate content, texture, and acidity of the soil. Protective measures for steel or more resistant concrete help to avoid or minimize damage resulting from the corrosion. Uncoated steel intersecting soil boundaries or soil horizons is more susceptible to corrosion than an installation that is entirely within one kind of soil or within one soil horizon.

Engineering test data

The results of analyses of engineering properties of several typical soils of the survey area are given in table 15.

The data presented are for soil samples that were collected from carefully selected sites. The soil profiles sampled are typical of the series discussed in the section "Soil series and morphology." The soil samples were analyzed by the Louisiana Department of Highways.

The methods used in obtaining the data are listed by code in the next paragraph. Most of the codes, in parentheses, refer to the methods assigned by the American Association of State Highway and Transportation Officials. The code for Unified classification is assigned by the American Society for Testing and Materials.

The methods and codes are AASHTO classification (M-145-66); Unified classification (D-2487-66T); mechanical analysis (T88-57); liquid limit (T89-60); plasticity index (T90-56); and moisture-density, method A (T99-57).

Soil series and morphology

In this section, each soil series recognized in the survey area is described in detail. The descriptions are arranged in alphabetic order by series name.

Characteristics of the soil and the material in which it formed are discussed for each series. The soil is then compared to similar soils and to nearby soils of other series. Then a pedon, a small three-dimensional area of soil typical of the soil series in the survey area, is described. The detailed descriptions of each soil horizon follow standards in the Soil Survey Manual (*26*). Unless otherwise noted, colors described are for moist soil.

Following the pedon description is the range of important characteristics of the soil series in this survey area. Phases, or map units, of each soil series are described in the section "Soil maps for detailed planning."

Acy series

The Acy series consists of somewhat poorly drained, moderately slowly permeable soils that formed in loess. These nearly level soils are in rather broad areas at the higher elevations on the low terraces in the northeastern part of the parish. Slopes are less than 1 percent.

Acy soils are geographically closely associated with Baldwin, Frost, and Patoutville soils. Baldwin soils, at lower elevations, have a fine control section. Frost soils, also at lower elevations, are more poorly drained than

Acy soils. Patoutville soils have red mottles and do not have concretions of calcium carbonate in the B horizon.

Typical pedon of Acy silt loam in a cultivated field, 4.0 miles southeast of Carencro, 2.5 miles east of intersection of U.S. Highway 167 and Louisiana Highway 728-1, about 120 yards south of road, Spanish Land Grant sec. 47, T. 9 S., R. 5 E.:

Ap—0 to 5 inches; dark gray (10YR 4/1) silt loam; weak fine granular structure; friable; many fine roots, neutral; abrupt smooth boundary.

B21tg—5 to 16 inches; grayish brown (10YR 5/2) silty clay loam; common medium prominent strong brown (7.5YR 5/8) and yellowish brown (10YR 5/6) mottles; moderate medium subangular blocky structure; firm; common fine roots; distinct continuous very dark gray clay films on faces of peds; few fine black concretions; moderately alkaline; gradual smooth boundary.

B22tca—16 to 26 inches; grayish brown (10YR 5/2) silty clay loam; many medium distinct yellowish brown (10YR 5/6) mottles; moderate medium subangular blocky structure; firm; distinct discontinuous clay films on faces of peds; common medium concretions of calcium carbonate; few fine black concretions; moderately alkaline; gradual smooth boundary.

B3—26 to 60 inches; grayish brown (10YR 5/2) silt loam; common medium distinct yellowish brown (10YR 5/6) mottles; massive; friable; moderately alkaline.

Reaction ranges from strongly acid to mildly alkaline in the A horizon and from medium acid to moderately alkaline in the B21t horizon. Reaction ranges from neutral to moderately alkaline in the B22t and B3 horizons.

The A horizon has hue of 10YR, value of 4 or 5, and chroma of 1 or 2.

The B21tg horizon has hue of 10YR, value of 3 to 5, and chroma 1 or 2. Mottles are in shades of brown and gray. Ped coatings are black and very dark gray.

The B22tca horizon has hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 2 to 6. Mottles are in shades of brown and gray. There are few to common concretions of calcium carbonate.

The B3 horizon has the same color range as the B22t horizon. Texture is silt loam or silty clay loam. Mottles are in shades of brown and gray.

Baldwin series

The Baldwin series consists of poorly drained, very slowly permeable soils that formed in clayey alluvium in the eastern part of the parish. These soils are on rather narrow ridges on the alluvial plain. Slopes are less than 1 percent.

Baldwin soils are geographically closely associated with Acy, Iberia, and Sharkey soils. Acy soils, on higher lying, convex ridges, have a fine-silty control section. Iberia soils, at lower elevations, have a mollic epipedon. Sharkey soils, also at lower elevations, have a very-fine control section.

Typical pedon of Baldwin silty clay loam in a pasture, 3 miles northeast of Broussard, 1.5 miles north of asphalt road on shell road, 1/4 mile east on field road, 100 feet north of field road, Spanish Land Grant sec. 14, T. 10 S., R 5 E.:

Ap—0 to 7 inches; very dark grayish brown (10YR 3/2) silty clay loam; few fine yellowish brown mottles; weak fine subangular blocky structure; friable; many fine roots; slightly acid; abrupt smooth boundary.

B21t—7 to 17 inches; dark gray (10YR 4/1) silty clay; common medium distinct yellowish brown (10YR 5/8) mottles; moderate medium subangular blocky structure; firm; common fine and medium roots; thick discontinuous very dark gray clay films on surfaces of peds; medium acid; clear wavy boundary.

B22t—17 to 25 inches; gray (10YR 5/1) silty clay; common medium distinct yellowish brown (10YR 5/6) mottles; moderate medium subangular blocky structure; firm; few fine roots; few fine black stains; thin discontinuous dark gray clay films on surfaces of peds and in root channels; neutral; clear wavy boundary.

B3g—25 to 41 inches; olive gray (5Y 5/2) silty clay; common medium prominent yellowish brown (10YR 5/6) mottles; weak medium subangular blocky structure; firm; common fine black concretions; mildly alkaline; gradual wavy boundary.

IICg—41 to 60 inches; olive gray (5Y 5/2) silt loam; few fine light brown mottles and common medium prominent yellowish brown (10YR 5/6) mottles; massive; friable; common fine black concretions; mildly alkaline.

Reaction is medium acid or slightly acid in the A horizon. Reaction ranges from medium acid to moderately alkaline in the B2t horizon and from neutral to moderately alkaline in the B3g and Cg horizons.

The A horizon has hue of 10YR, value of 3 or 4, and chroma of 1 or 2.

The B2t horizon has hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 1 or 2. It is clay or silty clay. Mottles are in shades of brown. Concretions of calcium carbonate range from none to common.

The B3g horizon has hue of 10YR, 2.5Y, or 5Y; value of 4 to 6; and chroma of 1 or 2. It is silty clay or silty clay loam. Mottles are in shades of brown.

The Cg horizon has the same color range as the B3g horizon. Texture is silt loam, loam, or very fine sandy loam. Mottles are in shades of brown.

Basile series

The Basile series consists of poorly drained, slowly permeable soils that formed in loamy alluvium in the extreme western part of the parish. These soils are on long, narrow alluvial plains on the terrace upland. Slopes are less than 1 percent.

Basile soils are geographically closely associated with Crowley, Jeanerette, Mowata, and Patoutville soils. Crowley and Patoutville soils, on higher, convex ridges, are somewhat poorly drained. Jeanerette soils, at somewhat higher elevations, have a mollic epipedon. Mowata soils, at a slightly higher or equal elevation, have a fine control section.

Typical pedon of Basile silt loam from an area of Basile soils in a wooded area, about 8.0 miles southwest of Duson, about 100 yards north of bridge over Indian Bayou on Louisiana Highway 35, 50 yards west of road, sec. 28, T. 10 S., R. 2 E.:

A1—0 to 6 inches; dark gray (10YR 4/1) silt loam; moderate fine granular structure; friable; common fine roots; strongly acid; clear wavy boundary.

A21g—6 to 17 inches; gray (10YR 6/1) silt loam; few fine distinct yellowish brown mottles; weak fine subangular blocky structure; friable; medium acid; clear wavy boundary.

A22g—17 to 24 inches; light gray (5Y 6/1) silt loam; few fine distinct dark brown mottles; weak fine subangular blocky structure; firm; medium acid; abrupt irregular boundary.

B21tg—24 to 34 inches; gray (5Y 5/1) silty clay loam; few fine yellowish brown mottles; moderate medium subangular blocky structure; firm; distinct patchy clay films on faces of peds; tongues of the A2 horizon extend to a depth of 33 inches; moderately alkaline; gradual wavy boundary.

B22tg—34 to 50 inches; light olive gray (5Y 6/2) silty clay loam; common medium distinct light olive brown (2.5Y 5/4) mottles; moderate medium subangular blocky structure; firm; common coarse concretions of calcium carbonate; distinct patchy clay films on faces of peds; moderately alkaline; clear wavy boundary.

B3g—50 to 60 inches; gray (5Y 6/1) silty clay loam; common medium distinct light olive brown (2.5Y 5/4) mottles; weak medium subangular blocky structure; firm; common fine concretions of calcium carbonate; common medium black bodies; moderately alkaline.

Reaction ranges from strongly acid to medium acid in the A horizon, from medium acid to moderately alkaline in the B2 horizon, and from slightly acid to moderately alkaline in the B3 horizon.

The A1 horizon has hue of 10YR, value of 4 to 6, and chroma of 1.

The A2 horizon has hue of 10YR or 5Y, value of 5 or 6, and chroma of 1.

The Bt horizon has hue of 10YR or 5Y, value of 5 or 6, and chroma of 1 or 2. Mottles are in shades of brown. Concretions of calcium carbonate range from none to common.

The B3 horizon has the same color range as the Bt horizon. Texture is silty clay loam or silt loam. Concretions of calcium carbonate range from none to common.

Coteau series

The Coteau series consists of somewhat poorly drained, moderately slowly permeable soils that formed in loess, mainly on the terrace upland. These soils are on broad, convex stream divides; in convex, very gently undulating areas; and on very gently sloping side slopes mainly in the north through south-central parts of the parish. Slopes are dominantly less than 1 percent but range to as much as 3 percent along some drainageways.

Coteau soils are geographically closely associated with Frost, Memphis, and Patoutville soils. Frost soils, in depressions, are poorly drained. Memphis soils, on higher, convex ridges, are well drained. Patoutville soils, at slightly lower elevations, have red mottles in the B horizon.

Typical pedon of Coteau silt loam, 0 to 1 percent slopes, in a pasture, in Lafayette city limits on Bank Street, 200 feet east of street, SE1/4SE1/4 sec. 28, T. 9 S., R. 4 E.:

Ap—0 to 8 inches; dark brown (10YR 4/3) silt loam; few fine faint dark yellowish brown mottles; weak fine granular structure; very friable; many fine roots; medium acid; abrupt smooth boundary.

B21t—8 to 16 inches; dark brown (10YR 4/3) silt loam; common medium faint dark yellowish brown (10YR 4/4) mottles; moderate medium subangular blocky structure; friable; few fine roots; many fine pores; thin patchy clay films; common fine black stains; strongly acid; gradual wavy boundary.

B&A—16 to 26 inches; dark yellowish brown (10YR 4/4) silty clay loam; weak coarse prismatic structure that parts to moderate medium subangular blocky; friable; many fine pores; interfingers of light brownish gray silt loam 2 to 8 mm thick between prisms make up about 15 percent of the horizon; thick discontinuous clay films inside pores; distinct patchy silt coats on vertical surfaces of prisms; few fine black stains; strongly acid; clear irregular boundary.

B23t—26 to 57 inches; dark yellowish brown (10YR 4/4) silt loam; light brownish gray (2.5Y 6/2) silt loam in vertical streaks 1 to 2 mm wide; few fine distinct yellowish brown mottles; moderate medium prismatic structure that parts to moderate medium subangular blocky; friable; many fine pores; distinct discontinuous clay films on surfaces of peds and inside pores; thick continuous silt coatings on faces of prisms; medium acid; clear irregular boundary.

B3—57 to 60 inches; dark brown (7.5YR 4/4) silt loam; common medium prominent light brownish gray (2.5Y 6/2) mottles; weak coarse prismatic structure; friable; many fine pores; slightly acid.

Reaction ranges from strongly acid to slightly acid in the A and B2t horizons and from strongly acid to neutral in the B3 horizon.

The A horizon has hue of 10YR, value of 3 to 5, and chroma of 2 or 3.

The B2t horizon has hue of 10YR, value of 3 to 5, and chroma of 3 or 4. The A part of the B&A horizon has hue of 10YR, value of 5 or 6, and chroma of 2 or 3. Texture is silt loam or silty clay loam.

The B3 horizon has hue of 10YR, 7.5YR, or 2.5Y; value of 4 to 6; and chroma of 2 to 4.

Crowley series

The Crowley series consists of somewhat poorly drained, very slowly permeable soils that formed in clayey alluvium in the western part of the parish. These nearly level soils are on broad, convex drainage divides on the terrace upland. Slopes are less than 1 percent.

Crowley soils are geographically closely associated with Basile, Frost, Jeanerette, Mowata, and Patoutville soils. Mowata soils, at lower elevations, are poorly drained. Frost soils, also at lower elevations, are more poorly drained and have a fine-silty control section. Patoutville soils, at slightly higher elevations, have a fine-silty control section. Basile soils, at lower elevations, are more poorly drained and have a fine-silty control section. Jeanerette soils, at slightly lower elevations, have a mollic epipedon.

Typical pedon of Crowley silt loam in a cultivated field, 4.0 miles southwest of Duson, 0.75 mile southeast of bridge over Bayou Queue de Tortue on Louisiana Highway 720, Spanish Land Grant sec. 37, T. 10 S., R. 2 E.:

Ap—0 to 6 inches; dark grayish brown (10YR 4/2) silt loam; few fine dark yellowish brown mottles; few fine prominent yellowish red stains in root channels; weak medium granular structure; friable; many fine roots; neutral; abrupt smooth boundary.

A2g—6 to 14 inches; grayish brown (10YR 5/2) silt loam; few medium distinct yellowish brown (10YR 5/6) mottles; massive; friable; common fine dark brown concretions; few medium black concretions; moderately alkaline; abrupt smooth boundary.

B21tg—14 to 27 inches; grayish brown (10YR 5/2) silty clay; common fine prominent red mottles; moderate medium prismatic structure that parts to moderate medium subangular blocky; firm; common fine roots; thick continuous dark gray clay films on surfaces of peds; few patchy gray silt coatings on surfaces of prisms; few medium soft black accumulations; strongly acid; gradual wavy boundary.

B22tg—27 to 46 inches; gray (10YR 6/1) silty clay loam; common medium distinct yellowish brown (10YR 5/6) mottles; moderate medium prismatic structure that parts to moderate medium subangular blocky; firm; distinct discontinuous clay films on surfaces of peds and in root channels; few fine and medium black concretions; medium acid; gradual wavy boundary.

B3tg—46 to 75 inches; gray (10YR 6/1) silty clay loam; common medium distinct yellowish brown (10YR 5/6) mottles; weak medium prismatic structure; firm; thin patchy gray coatings on surfaces of peds; few medium black concretions; few krotovinas filled with gray silt loam; slightly acid.

Reaction ranges from medium acid to neutral in the Ap horizon and from medium acid to moderately alkaline in the A2 horizon. Reaction ranges from strongly acid to slightly acid in the B2t horizon and from slightly acid to moderately alkaline in the B3 horizon.

The Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 1 or 2.

The A2 horizon has hue of 10YR, value of 5 or 6, and chroma of 1 or 2.

The B2t horizon has hue of 10YR, value of 4 to 6, and chroma of 1 or 2. Texture is silty clay or silty clay loam. Mottles are in shades of red and brown.

The B3 horizon has hue of 10YR, 2.5Y, or 5Y; value of 5 or 6; and chroma of 1 or 2. Mottles are in shades of brown. The horizon is silty clay loam or silty clay.

Fausse series

The Fausse series consists of very poorly drained, very slowly permeable soils that formed in clayey alluvium in the eastern part of the parish. These soils are in low, depressional areas on the alluvial plain. Slopes are less than 0.25 percent.

Fausse soils are geographically closely associated with Sharkey soils, which have vertic properties and are slightly higher in elevation.

Typical pedon of Fausse clay from an area of Fausse association in a wooded area, 3.5 miles northeast of Carencro, 0.5 mile west of Bayou Vermilion, Spanish Land Grant sec. 72, T. 8 S., R. 5 E.:

A1—0 to 7 inches; very dark grayish brown (10YR 3/2) clay; weak medium angular blocky structure; plastic; many fine and medium roots and partially decayed woody material; medium acid; clear wavy boundary.

B21g—7 to 21 inches; dark gray (10YR 4/1) clay; weak medium angular blocky structure; plastic; neutral; gradual wavy boundary.

B22g—21 to 37 inches; dark gray (5Y 4/1) clay; massive; few medium distinct brown (10YR 4/3) mottles; weak medium subangular blocky structure; plastic; neutral; gradual wavy boundary.

Cg—37 to 60 inches; dark greenish gray (5G 4/1) clay; common medium faint grayish green (5G 4/2) mottles; massive; plastic; neutral.

Reaction ranges from medium acid to neutral in the A horizon and from neutral to moderately alkaline in the Bg and Cg horizons.

The A horizon has hue of 10YR or 5Y, value of 3 or 4, and chroma of 1 or 2.

The Bg horizon has hue of 10YR or 5Y, value of 4 or 5, and chroma of 1. Mottles are in shades of brown.

The Cg horizon has hue of 5Y or 5G, value of 4 or 5, and chroma of 1. Mottles are in shades of gray and green.

Frost series

The Frost series consists of poorly drained, slowly permeable soils that formed in loess or in mixed loess and alluvial sediments. These soils are on broad flats and in long, narrow depressions along drainageways on the terrace upland and on low terraces throughout the parish. Slopes are dominantly less than 1 percent.

Frost soils are geographically closely associated with Acy, Coteau, Crowley, Memphis, Mowata, Patoutville, and Jeanerette soils. Acy, Coteau, Crowley, and Patoutville soils, on higher lying ridges, are somewhat poorly drained. Memphis soils, also on convex, higher lying ridges, are well drained. Mowata soils have a fine control section. Jeanerette soils have a mollic epipedon.

Typical pedon of Frost silt loam in a cultivated field, 2.0 miles south of Carencro on Louisiana Highway 182, 1.5 miles west on asphalt road, 100 feet south of road, NW1/4SW1/4 sec. 4, T. 9 S., R. 4 E.:

Ap—0 to 7 inches; dark gray (10YR 4/1) silt loam; common medium distinct dark brown (10YR 3/3) mottles; weak fine granular structure; friable; common fine roots; slightly acid; clear smooth boundary.

A2—7 to 14 inches; gray (10YR 6/1) silt loam; common medium distinct dark grayish brown (10YR 4/2) mottles; massive; friable; common fine roots; few medium black concretions; strongly acid; clear irregular boundary.

B21t—14 to 22 inches; dark gray (10YR 4/1) silty clay loam; moderate medium subangular blocky structure; firm; thick continuous very dark gray clay films on surfaces of peds; tongues of A2 material; few fine black concretions; very strongly acid; clear wavy boundary.

B22t—22 to 33 inches; gray (10YR 5/1) silty clay loam; common medium distinct dark yellowish brown (10YR 4/4) mottles; moderate medium subangular blocky structure; firm; thick continuous dark gray clay films on surfaces of peds; tongues of A2 material extend to a depth of 32 inches; common fine black concretions; very strongly acid; gradual wavy boundary.

B23t—33 to 46 inches; gray (5Y 5/1) silty clay loam; common medium prominent dark yellowish brown (10YR 4/4) mottles; moderate medium prismatic structure that parts to weak medium subangular blocky; firm; thick; continuous gray clay films on surfaces of peds; common gray silt coatings on surfaces of prisms; few fine black concretions; medium acid; clear wavy boundary.

B3t—46 to 60 inches; gray (10YR 6/1) silt loam; common medium distinct dark yellowish brown (10YR 4/4) mottles; weak medium prismatic structure; firm; distinct discontinuous clay films on surfaces of peds; common fine black concretions; slightly acid.

Reaction ranges from strongly acid to slightly acid in the A1 and Ap horizons and from very strongly acid to slightly acid in the A2 horizon. Reaction ranges from very strongly acid to neutral in the Bt horizon.

The A1 and Ap horizons have hue of 10YR, value of 4 to 6, and chroma of 1 or 2.

The A2 horizon has hue of 10YR, value of 4 to 6, and chroma of 1 or 2.

The Bt horizon has hue of 10YR, 2.5Y, or 5Y; value of 5 or 6; and chroma of 1 or 2. Texture is silty clay loam or silty loam. Mottles are in shades of brown. Ped coatings are black, dark gray, or very dark gray.

Gallion series

The Gallion series consists of well drained, moderately permeable soils that formed in loamy alluvium. These soils are on very narrow natural levees of Bayou Vermilion on the alluvial plain in the eastern part of the parish. Slopes are less than 1 percent.

Gallion soils are geographically closely associated with Baldwin and Iberia soils. Iberia soils, at lower elevations, have a mollic epipedon. Baldwin soils, also at lower elevations, have vertic properties.

Typical pedon of Gallion silt loam in a cultivated field, 0.5 mile south of bridge over Bayou Vermilion on Louisiana Highway 726, 175 feet east of bayou; Spanish Land Grant sec. 89, T. 8 S., R. 5 E.:

Ap—0 to 7 inches; brown (7.5YR 5/2) silt loam; weak fine granular structure; friable; many fine roots; slightly acid; abrupt smooth boundary.

B21t—7 to 19 inches; yellowish red (5YR 4/6) silty clay loam; moderate medium prismatic structure that parts to weak fine subangular blocky; thin patchy clay films on surfaces of peds; firm; neutral; clear wavy boundary.

B31—19 to 32 inches; yellowish red (5YR 4/6) very fine sandy loam; weak medium subangular blocky structure; friable; common fine black stains; moderately alkaline; clear wavy boundary.

B32—32 to 46 inches; yellowish red (5YR 4/6) silt loam; weak medium subangular blocky structure; firm; moderately alkaline; gradual wavy boundary.

IIC—46 to 60 inches; dark gray (10YR 4/1) silty clay loam; common fine distinct yellowish brown mottles; weak coarse prismatic structure; firm; moderately alkaline.

Reaction ranges from medium acid to neutral in the A horizon, from medium acid to mildly alkaline in the B2 horizon, and from slightly acid to moderately alkaline in the B3 and C horizons.

The A horizon has hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 2 or 3.

The Bt horizon has hue of 5YR, value of 4 or 5, and chroma of 4 to 6.

The B3 horizon has the same color range as the Bt horizon. It is stratified silt loam, very fine sandy loam, or silty clay loam.

Iberia series

The Iberia series consists of poorly drained, very slowly permeable soils that formed in clayey alluvium in the eastern part of the parish. These level soils are in broad areas on the natural levees of Bayou Teche on the alluvial plain in the eastern part of the parish. Slopes are less than 1 percent.

Iberia soils are geographically closely associated with Baldwin, Gallion, and Sharkey soils. Baldwin soils, on higher ridges, do not have a mollic epipedon. Gallion soils, on higher, convex ridges, have chroma of more than 2. Sharkey soils have a very-fine control section and do not have a mollic epipedon.

Typical pedon of Iberia silty clay in a pasture, 2 miles east of Lafayette on Louisiana Highway 353, 0.25 mile west of road, Spanish Land Grant sec. 93, T. 9 S., R. 5 E.:

Ap—0 to 9 inches; very dark gray (10YR 3/1) silty clay; common fine distinct yellowish brown mottles; moderate fine angular blocky structure; firm; many fine roots; neutral; abrupt smooth boundary.

A1—9 to 14 inches; black (10YR 2/1) clay; few fine light brownish gray mottles; weak coarse angular blocky structure; firm; neutral; clear wavy boundary.

B21g—14 to 31 inches; gray (10YR 5/1) clay; common medium distinct olive yellow (2.5Y 6/6) mottles; moderate coarse prismatic structure that parts to moderate medium angular blocky; firm; many shiny surfaces on faces of peds; few krotovina; common fine to coarse concretions of calcium carbonate; moderately alkaline; gradual wavy boundary.

B22g—31 to 47 inches; gray (10YR 5/1) clay; few medium distinct brownish yellow (10YR 6/6) and few fine distinct yellowish brown mottles; weak coarse prismatic structure; firm; few fine concretions of calcium carbonate; few fine black concretions; moderately alkaline; clear smooth boundary.

Cg—47 to 77 inches; gray (5Y 5/1) silty clay loam; many coarse prominent yellowish brown (10YR 5/6) mottles; massive; firm; common medium black concretions; moderately alkaline.

Reaction ranges from slightly acid to mildly alkaline in the A horizon and from neutral to moderately alkaline in the B horizon.

The A horizon has hue of 10YR, value of 2 or 3, and chroma of 1 or 2. It is silty clay.

The B horizon has hue of 10YR or 5Y, value of 4 or 5, and chroma of 1 or 2. It is silty clay or clay. Mottles are in shades of brown or yellow. Concretions of calcium carbonate are typically present.

The C horizon has hue of 10YR or 5Y, value of 5 or 6, and chroma of 1 or 2. It is silty clay loam, silty clay, or clay.

These soils are taxadjuncts to the Iberia series because clay content in the control section is 3 percent more than the upper end of the family texture range and the liquid limit and plasticity index are slightly outside the coordinated interpretation range. These differences, however, do not significantly affect use and management of these soils.

Jeanerette series

The Jeanerette series consists of somewhat poorly drained, moderately slowly permeable soils that formed in loess or in mixed loess and alluvial sediments. These level to nearly level soils are in broad areas on the terrace upland in the western part of the parish. Slope is less than 1 percent.

Jeanerette soils are geographically closely associated with Basile, Crowley, Frost, Judice, Mowata, and Patoutville soils. Basile and Mowata soils, at lower elevations, are more poorly drained. Crowley and Patoutville soils, on higher lying ridges, do not have a mollic epipedon. Judice soils, at lower elevations, have a fine control section.

Typical pedon of Jeanerette silt loam in a pasture, 0.5 mile east of Duson on gravel road, 500 feet south on farm road, 100 feet east of road in field, NW1/4NE1/4 sec. 28, T. 9 S., R. 3 E.:

Ap—0 to 9 inches; very dark gray (10YR 3/1) silt loam; weak fine granular structure; very friable; many fine roots; slightly acid; clear smooth boundary.

B21t—9 to 16 inches; black (10YR 2/1) silty clay loam; weak medium prismatic structure that parts to moderate medium subangular blocky; firm; many fine roots concentrated between prisms; thin patchy clay films on surfaces of peds; few fine black concretions; neutral; gradual wavy boundary.

B22t—16 to 26 inches; dark grayish brown (2.5Y 4/2) silty clay loam; common fine distinct light olive brown (2.5Y 5/4) mottles and few fine prominent yellowish brown mottles; weak medium prismatic structure that parts to moderate medium subangular blocky; firm; many fine roots concentrated between prisms; thick discontinuous clay films on surfaces of peds; common concretions of calcium carbonate 2 to 30 mm in diameter; few fine black concretions; moderately alkaline; gradual wavy boundary.

B23t—26 to 33 inches; grayish brown (2.5Y 5/2) silty clay loam; common fine distinct light olive brown mottles and few fine prominent yellowish brown mottles; moderate medium prismatic structure that parts to moderate medium subangular blocky; firm; few fine roots concentrated between prisms; distinct discontinuous clay films on surfaces of peds; common concretions of calcium carbonate 2 to 30 mm in diameter; few fine black concretions; moderately alkaline; gradual wavy boundary.

B3t—33 to 60 inches; grayish brown (2.5Y 5/2) silt loam; few fine distinct light olive brown mottles and common medium prominent yellowish brown (10YR 5/6) mottles; weak coarse prismatic structure; firm; few fine roots concentrated between prisms; thin patchy dark gray clay films on vertical surfaces of peds; common fine and medium black concretions; moderately alkaline.

The solum ranges from 40 to 60 inches in thickness. Reaction ranges from medium acid to mildly alkaline in the A horizon and from neutral to moderately alkaline in the Bt horizon.

The A horizon has hue of 10YR, value of 2 or 3, and chroma of 1 or 2.

The B2t horizon has hue of 10YR, value of 2 or 3, and chroma of 1 or 2. The lower part of the B2t horizon has hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 2 or 4. Mottles are in shades of brown or olive. There are common to many concretions of calcium carbonate.

The B3t horizon has the same color range as the lower part of the B2t horizon. Texture is silt loam, loam, or silty clay loam.

Judice series

The Judice series consists of poorly drained, very slowly permeable soils that formed in clayey alluvium in the western part of the parish. These soils are on broad flats on the terrace upland. Slopes are less than 0.5 percent.

Judice soils are geographically closely associated with Frost, Jeanerette, and Mowata soils. Frost soils, at slightly higher elevations, have a fine-silty control section. Jeanerette soils, on higher ridges, have a fine-silty control section. Mowata soils, at slightly higher elevations, do not have a mollic epipedon.

Typical pedon of Judice silty clay loam in a cultivated field, about 5 miles south of Duson on Louisiana Highway 343, 0.5 mile east of junction with Louisiana Highway 342, 0.5 mile north on gravel road, 600 feet north of road, SW1/4SE1/4 sec. 16, T. 10 S., R. 3 E.:

Ap—0 to 6 inches; very dark gray (10YR 3/1) silty clay loam; many yellowish red (5YR 4/6) stains in root channels; massive; firm; many fine roots; neutral; abrupt smooth boundary.

A1—6 to 17 inches; black (10YR 2/1) silty clay; common fine distinct yellowish brown mottles and few fine prominent light olive gray mottles; many yellowish red (5YR 4/6) stains in root channels; weak medium prismatic structure that parts to weak fine angular blocky; firm; many fine roots; many shiny pressure faces on surfaces of peds; common crawfish krotovinas 0.75 inch to 1.5 inches in diameter; moderately alkaline; gradual wavy boundary.

B2g—17 to 38 inches; dark gray (5Y 4/1) silty clay; common medium prominent yellowish brown (10YR 5/6) mottles and few fine light olive gray mottles; weak medium prismatic structure that parts to moderate fine angular blocky; firm; few fine roots; many shiny pressure faces on surfaces of peds; few slickensides 3 to 6 inches long; common crawfish krotovinas 0.75 to 1.5 inches in diameter; moderately alkaline; gradual wavy boundary.

B3g—38 to 60 inches; light gray (5Y 6/1) silty clay; common medium prominent yellowish brown (10YR 5/6) mottles and common greenish gray (5GY 6/1) stains along root channels; weak medium prismatic structure that parts to moderate fine angular blocky; firm; few fine roots; many shiny pressure faces on surfaces of peds; few slickensides 3 to 6 inches long; common crawfish krotovinas 0.75 inch to 1.5 inches in diameter; few coarse soft black bodies; moderately alkaline.

The solum ranges from 50 to 80 inches in thickness. Reaction ranges from medium acid to moderately alkaline in the A horizon and from slightly acid to moderately alkaline in the Bg horizon.

The A horizon has hue of 10YR, value of 2 or 3, and chroma of 1 or 2. Texture is silty clay loam.

The B2g horizon has hue of 10YR or 5Y, value of 3 or 4, and chroma of 1 or 2. Mottles are in shades of brown or olive. Texture is silty clay, silty clay loam, or clay loam.

The B3g horizon has hue of 10YR, 2.5Y, or 5Y; value of 5 or 6; and chroma of 1 or 2. Mottles are in shades of brown or olive. Texture is silty clay, silty clay loam, or clay loam.

Memphis series

The Memphis series consists of well drained, moderately permeable soils that formed in loess in the eastern part of the parish. These soils are on broad, nearly level to gently sloping stream divides and moderately sloping side slopes along some drainageways in the terrace upland. Slopes range from less than 1 percent to 8 percent.

Memphis series are geographically closely associated with Coteau and Frost soils. Coteau soils are on lower lying ridges and are somewhat poorly drained. Frost soils are in depressions at lower elevations and are poorly drained.

Typical pedon of Memphis silt loam, 0 to 1 percent slopes, in a cultivated field, 1.5 miles northeast of Broussard on U.S. Highway 90, 0.33 mile southwest on asphalt road, 250 feet north of road, Spanish Land Grant sec. 17, T. 10 S., R. 5 E.:

Ap—0 to 8 inches; dark grayish brown (10YR 4/2) silt loam; weak fine granular structure; very friable; medium acid; clear smooth boundary.

B21t—8 to 18 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; firm; distinct discontinuous dark grayish brown clay films on surfaces of peds; thin discontinuous silt coatings on surfaces of peds; very strongly acid; clear wavy boundary.

B22t—18 to 32 inches; dark brown (7.5YR 4/4) silty clay loam; moderate medium prismatic structure that parts to moderate medium subangular blocky; firm; thin patchy clay films on surfaces of peds; thin discontinuous silt coatings on surfaces of peds; strongly acid; clear wavy boundary.

B3t—32 to 53 inches; dark brown (7.5YR 4/4) silt loam; weak medium prismatic structure; friable; many fine pores; thin patchy clay films on surfaces of peds; medium acid; gradual wavy boundary.

C—53 to 82 inches; dark brown (7.5YR 4/4) silt loam; massive; friable; slightly acid.

Reaction ranges from very strongly acid to medium acid throughout.

The A horizon has hue of 10YR, value of 3 to 5, and chroma of 3 or 4.

The B horizon has hue of 10YR or 7.5YR, value of 4 of 5, and chroma of 4. Texture is silty clay loam or silt loam.

Mowata series

The Mowata series consists of poorly drained, very slowly permeable soils that formed in clayey sediments. These soils are in swales on broad flats on the terrace upland in the western part of the parish. Slopes are less than 1 percent.

Mowata soils are geographically closely associated with Crowley, Frost, Judice, and Jeanerette soils. Frost soils, at very slightly higher elevations, have a fine-silty control section. Judice soils, in broad depressions, have a mollic epipedon. Crowley soils, on higher, convex ridges, are better drained than Mowata soils. Jeanerette soils, at higher elevations, have a mollic epipedon and a fine-silty control section.

Typical pedon of Mowata silt loam from an area of Mowata-Frost complex, in a cultivated field, 1.5 miles south of Ridge on Louisiana Highway 343, 0.5 mile east on asphalt road, 200 feet north of road, SW1/4SE1/4 sec. 26, T. 9 S., R. 3 E.:

Ap—0 to 8 inches; dark gray (10YR 4/1) silt loam; common fine distinct brown stains in root channels; weak medium granular structure; friable; many fine roots; neutral; clear smooth boundary.

A2g—8 t 17 inches; gray (10YR 5/1) silt loam; common fine distinct strong brown stains in root channels; massive; friable; medium acid; abrupt irregular boundary.

B21tg—17 to 35 inches; gray (10YR 5/1) silty clay; many medium distinct yellowish brown (10YR 5/8) mottles; moderate medium subangular blocky structure; firm; distinct discontinuous dark gray clay films on surfaces of peds; tongues of gray material from the A2g horizon extend to a depth of 34 inches; strongly acid; clear wavy boundary.

B22tg—35 to 42 inches; light brownish gray (2.5Y 6/2) silty clay; common medium prominent yellowish brown (10YR 5/8) mottles; few fine yellowish brown stains in root channels; weak medium prismatic structure that parts to moderate medium subangular blocky; distinct discontinuous gray clay films on surfaces of peds; few medium black concretions; medium acid; clear wavy boundary.

Cg—42 to 60 inches; light olive gray (5Y 6/2) silty clay loam; common medium prominent yellowish brown (10YR 5/8) mottles; weak medium prismatic structure; firm; common medium black concretions; mildly alkaline.

Reaction ranges from medium acid to neutral in the A horizon, from strongly acid to moderately alkaline in the Bt horizon, and from mildly alkaline to moderately alkaline in the C horizon.

The Ap or A1 horizon has hue of 10YR, value of 4 or 5, and chroma of 1 or 2.

The A2 horizon has hue of 10YR, value of 5 or 6, and chroma of 1 or 2.

The B2t horizon has hue of 10YR to 5Y, value of 5 or 6, and chroma of 1 or 2. Texture is silty clay loam or silty clay.

The C horizon has hue of 2.5Y or 5Y, value of 5 or 6, and chroma of 1 or 2. Texture is silty clay or silty clay loam.

Patoutville series

The Patoutville series consists of somewhat poorly drained, slowly permeable soils that formed in loess. These nearly level soils are on broad stream divides throughout most of the terrace upland. Slopes are less than 1 percent.

Patoutville soils are geographically closely associated with Acy, Basile, Crowley, Frost, and Jeanerette soils. Acy soils do not have red mottles. Basile soils are poorly drained. Crowley soils have a fine control section. Frost soils, at lower elevations, are poorly drained. Jeanerette soils have a mollic epipedon.

Typical pedon of Patoutville silt loam in a cultivated field, 1.5 miles southwest of Scott, 1.0 mile south of U.S. Highway 90, SW1/4NE1/4 sec. 36, T. 9 S., R. 3 E.:

Ap—0 to 4 inches; brown (10YR 5/3) silt loam; weak fine granular structure; very friable; slightly acid; abrupt smooth boundary.

A2—4 to 10 inches; dark grayish brown (10YR 4/2) silt loam; weak fine subangular blocky structure; friable; many fine pores; slightly acid; abrupt wavy boundary.

B21t—10 to 20 inches; dark grayish brown (10YR 4/2) silty clay loam; common fine prominent red mottles; moderate medium prismatic structure parts to moderate medium subangular blocky; firm; dark gray clay films on surfaces of peds; common medium black concretions; neutral; clear wavy boundary.

B22t—20 to 32 inches; grayish brown (2.5Y 5/2) silty clay loam; common fine prominent red mottles and common medium distinct yellowish brown (10YR 5/6) mottles; moderate coarse prismatic structure that parts to moderate medium subangular blocky; firm; gray clay films on surfaces of peds; common medium black concretions; neutral; gradual wavy boundary.

B3g—32 to 60 inches; gray (10YR 6/1) silt loam; common medium distinct yellowish brown (10YR 5/6) mottles; weak medium prismatic structure; friable; few medium black concretions, mildly alkaline.

Reaction ranges from very strongly acid to slightly acid in the A horizon, from strongly acid to neutral in the B2t horizon, and from slightly acid to moderately alkaline in the B3 horizon.

The Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 2 or 3.

The B2t horizon has hue of 10YR, value of 4 to 6, and chroma of 1 to 4. Mottles are in shades of red and brown.

The B3 horizon has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 1 or 2. Mottles are in shades of brown. Texture is silty clay loam or silt loam.

Sharkey series

The Sharkey series consists of poorly drained, very slowly permeable soils that formed in clayey alluvium. These level soils are in broad areas adjacent to the natural levee of Bayou Teche on the alluvial plain in the eastern part of the parish. Slope is less than 0.5 percent.

Sharkey soils are geographically closely associated with Baldwin, Fausse, and Iberia soils. Baldwin soils, on ridges, have a fine control section. Fausse soils do not have vertic properties. Iberia soils have a mollic epipedon.

Typical pedon of Sharkey clay, frequently flooded, in a wooded area about 6 miles northeast of Carencro, 0.75 mile south of the Lafayette-St. Martin Parish boundary on Louisiana Highway 726, 0.25 mile east of Louisiana Highway 726, Spanish Land Grant sec. 87, T. 8 S., R.5 E.:

A1—0 to 3 inches; dark grayish brown (10YR 4/2) clay; weak medium subangular blocky structure; firm; many fine roots; neutral; clear smooth boundary.

B21g—3 to 12 inches; gray (10YR 5/1) clay; common medium distinct yellowish brown (10YR 5/8) mottles; moderate medium subangular blocky structure; firm; many fine roots; mildly alkaline; gradual wavy boundary.

B22g—12 to 21 inches; light brownish gray (2.5YR 6/2) clay; common medium distinct light olive brown (2.5Y 5/4) mottles; moderate medium subangular blocky structure; firm; few fine roots; moderately alkaline; gradual wavy boundary.

B3g—21 to 46 inches; light brownish gray (10YR 6/2) clay; common medium distinct yellowish brown (10YR 5/6) mottles; moderate medium subangular blocky structure; firm; few fine brown concretions; moderately alkaline; gradual wavy boundary.

Cg—46 to 60 inches; gray (10YR 5/1) clay; common fine yellowish brown mottles; massive; firm; moderately alkaline.

Reaction ranges from slightly acid to moderately alkaline in the A horizon and from mildly alkaline to moderately alkaline in the Bg horizon.

The A horizon has hue of 10YR, value of 3 or 4, and chroma of 1 or 2. Texture is clay.

The B horizon has hue of 10YR or 5Y, value of 4 to 6, and chroma of 1 or 2. Mottles are in shades of brown. Concretions of calcium carbonate range from none to common.

The C horizon has the same color range as the B horizon. Texture is clay, silty clay, silty clay loam, or silt loam.

The soils in map unit 24, Sharkey clay, are taxajuncts to the Sharkey series because they contain concretions of calcium carbonate in the B2 horizon. This difference, however, does not affect use and management of these soils.

Classification of the soils

The system of soil classification currently used was adopted by the National Cooperative Soil Survey in 1965. Readers interested in further details about the system should refer to the latest literature available (*28*).

The system of classification has six categories. Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. In this system the classification is based on the different soil properties that can be observed in the field or those that can be inferred either from other properties that are observable in the field or from the combined data of soil science and other disciplines. The properties selected for the higher categories are the result of soil genesis or of factors that affect soil genesis. In table 16, the soils of the survey area are classified according to the system. Categories of the system are discussed in the following paragraphs.

ORDER. Ten soil orders are recognized as classes in the system. The properties used to differentiate among orders are those that reflect the kind and degree of dominant soil-forming processes that have taken place. Each order is identified by a word ending in *sol*. An example is Alfisol.

SUBORDER. Each order is divided into suborders based primarily on properties that influence soil genesis and are important to plant growth or that are selected to reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Aqualf (*Aqu*, meaning water, plus *alf*, from Alfisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of expression of pedogenic horizons; soil moisture and temperature regimes; and base status. Each great group is identified by the name of a suborder and a prefix that suggests something about the properties of the soil. An example is Albaqualfs (*Alb*, meaning a light colored horizon at or near the surface, plus *aqualf*, the suborder of Alfisols that have an aquic moisture regime).

SUBGROUP. Each great group may be divided into three subgroups: the central (typic) concept of the great groups, which is not necessarily the most extensive subgroup; the intergrades, or transitional forms to other orders, suborders, or great groups; and the extragrades, which have some properties that are representative of the great groups but do not indicate transitions to any other known kind of soil. Each subgroup is identified by one or more adjectives preceeding the name of the great group. The adjective *Typic* identifies the subgroup that is thought to typify the great group. An example is Typic Albaqualfs.

FAMILY. Families are established within a subgroup on the basis of similar physical and chemical properties that affect management. Among the properties considered in horizons of major biological activity below plow depth are particle-size distribution, mineral content, temperature regime, thickness of the soil penetrable by roots, consistence, moisture equivalent, soil slope, and permanent cracks. A family name consists of the name of a subgroup and a series of adjectives. The adjectives are the class names for the soil properties used as family differentiae. An example is fine, montmorillonitic, thermic Typic Albaqualfs.

SERIES. The series consists of soils that formed in a particular kind of material and have horizons that, except for texture of the surface soil or of the underlying substratum, are similar in differentiating characteristics and in arrangement in the soil profile. Among these characteristics are color, texture, structure, reaction, consistence, and mineral and chemical composition.

Formation of the soils

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In this section, the processes of soil formation are discussed and related to the soils in the survey area.

Processes of soil formation

The processes of soil formation are those processes or events occurring in soils that influence the kind and degree of development of soil horizons. The rate and relative effectiveness of different processes is determined by the factors of soil formation: climate, living organisms, relief, parent material, and time.

Important soil forming processes include those that result in (1) additions of organic, mineral, and gaseous materials to the soil; (2) losses of these same materials from the soil; (3) translocation of materials from one point to another within the soil; and (4) physical and chemical transformation of mineral and organic materials within the soil (*22*).

Typically, many processes occur simultaneously in soils. Examples in the survey area include accumulation of organic matter, development of soil structure, and leaching of bases from some soil horizons. The contribution of a particular process may change over a period of time. For example, installation of drainage and water control systems can change the length of time the soils are flooded or saturated with water. Some important processes that have contributed to the formation of the soils in Lafayette Parish are discussed in the following paragraphs.

Organic matter has accumulated, undergone partial decomposition, and been incorporated in all the soils. Organic matter production in soils is greatest in and above the surface layer. This results in the formation of soils that have a surface layer that is higher in organic matter content than the deeper horizons. The decomposition, incorporation, and mixing of organic residues into the soil is accomplished largely by the activity of living organisms. Many of the more stable products of decomposition remain as finely divided materials that contribute dark color, increased water holding and cation exchange capacities, granulation, and a source of plant nutrients in the soil.

The addition of alluvial sediments at the surface has been important in the formation of several of the soils. Added sediments provide new parent material in which processes of soil formation must then occur. Gallion soils formed in loamy alluvium deposited by the Red River. Sharkey and Fausse soils formed in areas characterized by accumulations of clayey back-swamp deposits.

Processes resulting in development of soil structure have occurred in all the soils. Plant roots and other organisms contribute to the rearrangement of soil material into secondary aggregates. Decomposition products or organic residues and secretions of organisms serve as cementing agents that help stabilize structural aggregates. Alternate wetting and drying as well as shrinking and swelling contribute to the development of structural aggregates and are particularly effective in soils that have appreciable amounts of clay. An example is Sharkey soils.

All the soils in the survey area except Memphis and Gallion soils have horizons in which reduction and segregation of iron and manganese compounds have been important processes. Reducing conditions prevail for long periods in poorly aerated horizons. Consequently, the relatively soluble reduced forms of iron and manganese are predominant over the less soluble oxidized forms. Reduced compounds of these elements result in the gray colors in the Bg and Cg horizons that are characteristic of most of the soils in the parish. In the more soluble reduced form, appreciable amounts of iron and manganese can be removed from the soils or translocated from one position to another within the soil by water. The presence of browner mottles in the predominantly gray horizons is indicative of segregation and local concentration of oxidized iron compounds as a result of alternating oxidizing and reducing conditions in the soils. The well drained Memphis and Gallion soils do not have the gray colors associated with wetness and poor aeration and apparently are not dominated by a reducing environment for significant periods of time.

Loss of components from the soils has been an important process in their formation. Water moving through the soil has leached soluble bases and any free carbonates that may have been present initially from some horizons of all the soils. All the soils are less acid with depth below horizons at or near the surface. The most extensive leaching has occurred in Memphis and Coteau soils, which are acid and do not become neutral or alkaline within the solum. The other soils in the parish are less severely leached, indicated by mildly alkaline or moderately alkline reaction in the lower horizons of the solum.

The formation, translocation, and accumulation of clay in the profile have been important processes during the development of most of the soils in Lafayette Parish. Silicon and alumina released as a result of weathering of such minerals as hornblende, amphibole, and feldspars can recombine with the components on water to form secondary clay minerals such as kaolinite. Layer silicate minerals such as biotite, glauconite, and montmorillonite can also weather to from other clay minerals such as vermiculite or kaolinite. Horizons of clay accumulation result largely from translocation of clays from upper to lower horizons. As water moves downward it can carry small amounts of clay in suspension. This clay is deposited, and it accumulates at the depths of penetration of the water or in horizons where it becomes flocculated of filtered out by fine pores in the soil. Over long periods, such processes can result in distinct horizons of clay accumulation. All the soils in Lafayette Parish except Fausse, Judice, Iberia, and Sharkey soils and Haploquolls and Udifluvents have a subsoil characterized by an accumulation of clay.

Secondary accumulation of calcium carbonate in the lower soil horizons has been an important process in many of the soils in Lafayette Parish. Nine of the 15 soil series mapped in the parish have, in places, secondary accumulations of carbonates at a depth of less than 60 inches. Carbonates dissolved from overlying horizons may have been translocated to these depths by water and redeposited. Other sources and processes can contribute in varying degrees to these carbonate accumulations. These include segregation of material within the horizon, upward translocation of materials in solution from deeper horizons during fluctuations of water table levels, and contributions of materials from readily weatherable minerals such as plagioclase.

Factors of soil formation

Soil is a natural, three-dimensional body that formed on the earth's surface and that has properties resulting from the integrated effect of climate and living matter acting on parent material, as conditioned by relief over periods of time.

The interaction of five main factors influences the processes of soil formation and results in differences among the soils. These factors are the physical and chemical composition of the parent material; the kind of plants and other organisms living in and on the soil; the relief of the land and its effect on runoff and soil moisture conditions; and the length of time it took the soil to form.

The effect of any one factor can differ from place to place, but the interaction of all the factors determines the kind of soil that forms. Because of these interactions, it is recognized that many of the differences in soils cannot be attributed to differences in only one factor. For example, organic matter content in the soils of Lafayette Parish is influenced by several factors including relief, parent material, and living organisms. Such interactions do not preclude recognition of the manner in which a given factor can influence a specific soil property. In the following paragraphs the factors of soil formation are discussed as they relate to soils in the survey area.

Climate

Lafayette Parish is in a region characterized by a humid, subtropical climate. A detailed discussion of the climate in the parish is given in the section "General nature of the parish."

The climate is relatively uniform throughout the parish. As a result, local differences in the soils are not caused by large differences in atmospheric climate. The warm average temperatures and large amounts of precipitation favor a rapid rate of weathering of readily weatherable minerals in the soils. Memphis and Coteau soils are the most highly leached soils in the parish, and they have acid reaction throughout the solum. Other soils in the parish are less leached, as indicated by soil reaction that is more alkaline with depth. Many of the soils in the parish have developed distinct horizons of clay accumulation. Differences in weathering, leaching, and translocation of clay are caused chiefly by variations in time, relief, and parent material rather than climate. Weathering processes involving the release and reduction of iron are indicated by the gray colors in AG, Bg, or Cg horizons in many of the soils. Oxidation and segregation of iron as a result of alternating oxidizing and reducing conditions is indicated by mottled horizons and iron and manganese concretions in most of the soils.

Another important facet of climate is expressed in the clayey soils that have large amounts of expanding-lattice minerals in which large changes in volume occur upon wetting and drying. Wetting and drying cycles and associated volume changes are important factors in the formation and stabilization of structural aggregates in these soils. When the wet soils dry, cracks of variable width and depth can form as a result of the decrease in volume. When the cracks form, the depth and extent of cracking are influenced by climate. Repeated large changes in volume freqently result in structural problems for buildings, roads, and other structures. Formation of deep, wide cracks may shear roots of plants growing in the soil. When cracks are present, much of the water from initial rainfall or irrigation is infiltered through the cracks. Once the soil has become wet, however, infiltration rates become slow or very slow. Formation of cracks occurs extensively in Baldwin, Iberia, Judice, and Sharkey soils during late summer and early fall, when the soils are driest. During this time, cracks of an inch or more in width and extending to a depth of more than 20 inches can form in most years. Cracks that are less extensive and less deep sometimes form in some of the less clayey soils, such as Mowata soils.

Living organisms

Living organisms affect the processes of soil formation in a number of ways and thereby exert a major influence on the kind and extent of horizons that develop. Growth of plants and activity of other organisms physically disturbs the soil; this in turn modifies porosity and influences the formation of structure and incorporation of organic matter. Photosynthesis of plants utilizes energy from the sun to synthesize compounds necessary for growth, in this way producing additional organic matter. Growth of plants and their eventual decomposition provides for recycling of nutrients from the soil and serves as a major source of organic residue. Decomposition and incorporation of organic matter by micro-organisms enchances the development of structure and generally increases the infiltration rate and available water capacity in soils. Relatively stable organic compounds in soils generally have very high cation exchange capacities and thus increase the capacity of the soil to absorb and store nutrients such as calcium, magnesium, and potassium. The extent of these and other processes and the kind of organic mater produced can vary widely, depending on the kinds of organisms living in and on the soil. For example, many writers (*5*, *13*) have shown that the organic matter content of soils developed under prairie vegetation is typically higher than in soils developed under forests.

The natural vegetation throughout most of the terrace upland of the parish was native tall prairie grass. The principal grasses were *Andropogon Spp.* in areas of the better drained soils and *Panicum Spp.* in areas of the less well drained soils. Soils that formed under the native prairie vegetation make up approximately 75 percent of the parish and include all the soils in the parish except mainly the Udifluvents and Sharkey, Memphis, Gallion, Fausse, and Basile soils, which developed under a mixed hardwood vegetation. The soils that developed under prairie vegetation in general have not only higher organic matter content but a darker surface layer and typically a higher content of bases and better tilth than comparable soils developed under forest vegetation. The organic matter content in cultivated soils is typically somewhat lower than it is in similar uncultivated soils and can vary widely as a result of use and management.

Differences in the amount of organic matter that has accumulated in and on the soils under both prairie and forest vegetation is influenced by the kinds and populations of micro-organisms. Aerobic organisms utilize oxygen from the air and are chiefly responsible for organic matter decomposition through rapid oxidation of organic residues. These organisms are most abundant and prevail for longer periods in the better drained and aerated soils, such as Gallion and Memphis soils. In more poorly drained soils, anaerobic organisms are predominant for longer periods during the year. Anaerobic organisms do not require oxygen from the air, and they decompose organic residues very slowly. Differences in decomposition by micro-organisms can result in larger accumulations of organic matter in soils that have restricted drainage, such as Judice soils, than in better drained soils, such as Patoutville soils. In general, for soils developed under both prairie and forest vegetation, the organic matter content is higher where the soil is more poorly drained and not aerated.

Relief

Relief and other physiographic features influence soil formation processes by affecting internal soil drainage, runoff, erosion and deposition, and exposure to the sun and wind.

The influence of relief on soils in Lafayette Parish is especially evident in the rates at which water runs off the surface, in the internal soil drainage, and in depths and duration of a seasonal high water table in the soils. Relief on the Baldwin, Iberia, Sharkey, and Fausse soils, which formed in Mississippi River alluvium, is progressively less in the order in which the soils are listed. The same order also indicates progressively lower elevations. For example, Baldwin soils typically occupy narrow, nearly level ridges, while Fausse soils occupy level or depressional areas. Rates of surface runoff are slow on Baldwin soils and become progressively slower through the list. Fausse soils have little or no runoff. Depth to and duration of a seasonal high water table show similar variations. For example, a seasonal high water table is generally present for 4, 5, 5, and 12 months in, respectively, Baldwin, Iberia, Sharkey, and Fausse soils. Internal soil drainage is also more restricted with less relief and at lower elevations. Baldwin, Iberia, and Sharkey soils are poorly drained, and Fausse soils are very poorly drained.

Similar relationships also exist in the soils developed in other parent materials. Table 17 shows the relationship between topography, runoff, soil drainage, and depth and duration of a seasonal high water table for all of the soil series mapped in the parish.

Parent material and time

The parent material for mineral soils is the material from which the soils first developed. In the survey area the effects of parent material are particularly expressed in certain differences in soil color, texture, permeability, and depth and degree of leaching. Parent material has also had a major influence on mineralogy of the soils and is a significant factor determining their susceptibility to erosion. The soils in the parish developed in unconsolidated materials deposited by water and wind. The characteristics, distribution, and depositional sequence of these materials are more thoroughly discussed in the section "Landforms and surface geology."

Parent material and time are independent factors of soil formation. For example, a particular kind of parent material may have been exposed to the processes of soil formation for periods ranging from a few years or less to more than a million years in some cases. The kinds of horizons and their degree of development within a soil are influenced by the length of time of soil formation. Long periods of time are generally required for prominent horizons to form. In the survey area, possible differences in the time of soil formation amount to several thousand years for some of the soils.

The soils in the parish have formed in at least five different parent materials, and for a number of the soils, these differences coincide approximately with differences in the time of exposure to processes of soil formation.

The Prairie Formation is made up of the oldest exposed sediments in the parish and is the basic parent material of Basile, Crowley, Mowata, and possibly Judice soils. These soils occur only in the western part of the parish, where accumulations of more recent deposits were thin. They contain a small admixture of the more recent deposits in the upper part in places, but most of the solum is developed in sediments of the Prairie Formation. In the area of Lafayette Parish where these soils occur, the Prairie Formation has been described as a relict deltaic plain characterized by largely clayey deposits (*3, 21*). The Crowley soil occupies nearly level, slightly convex slopes, and Judice and Mowata soils are level or in slightly depressional areas in the same landscape. The Basile soils are on the level alluvial plains of local drainageways. Both Crowley and Mowata soils have a B horizon characterized by secondary accumulations of clays. The Crowley soil is better drained, has more distinct horizon development, and is more acid in the upper part of the solum than the Mowata soil. Both have soil reaction that characteristically increases with depth.

Secondary accumulations of carbonates are present in the lower part of the B horizon in places. Secondary accumulations of carbonates and alkaline reaction in the solum of soils developed in the oldest exposed sediments in the parish may be attributed, in part, to one or more of several factors: (1) Low permeability of the clayey sediments may have restricted extensive leaching in sediments initially high in bases. Recent river sediments contain considerable quantities of free carbonates. Large volumes of water may be required to leach these sediments free of carbonates to an appreciable depth. (2) A high water table may have effectively prevented the extensive movement of water required for the soils to become highly leached. (3) Secondary enrichment of any leached zones may have occurred as a result of deposition of bases from other sources because of fluctuating water tables. These and possibly other factors can account for the relatively high base status, or the presence of free carbonates, in these soils; many soils developed in younger sediments initially high in bases are more highly leached.

The Acy, Coteau, Frost, Jeanerette, Memphis, and Patoutville soils all developed in silty, wind-deposited materials (loess). Combined, these soils make up more than 80 percent of the parish. The loess is younger than the Prairie Formation, which it overlies, and older than the Mississippi River sediments, which overlie the loessial deposits in part of the alluvial plain in the eastern part of the parish.

Initially, the silty loess deposits were quite permeable to water. High permeability allows for transmission through the soil of the large volumes of water necessary for extensive leaching. As a result, the Memphis and Coteau soils, which developed in loess on the better drained landscape positions, are the most highly leached soils in the parish. The soils developed in loess have a wide range of slopes; they range from level to moderately sloping. The steeper soils are almost entirely on the east-facing escarpment to the upland terrace. Because of the silty nature of the parent material, the soils developed in loess are more erodible than the other soils in the area having comparable slopes. They have a surface layer of silt loam and a subsoil of silty clay loam or silt loam. The sand content is low throughout the profile and generally amounts to less than 10 percent. Recognizable horizons of clay accumulation have developed as a result of translocation of clay during soil formation.

Many characteristics of the soils developed in loess differ widely. These differences are mostly a result of difference in relief and natural vegetation.

Basile and Judice soils appear to have developed in relatively old sediments that postdate the deposition of loess and that were derived largely from local sources. Basile soils formed in areas of loamy deposits that drain soils that developed in the Prairie Formation and in loess. They have distinct A and B horizons, and the B horizon is characterized by an accumulation of translocated clays. Typically, reaction increases with depth and accumulations of secondary carbonates are in the lower part of the solum. Judice soils developed in clayey sediments in broad depressional or ponded areas surrounded by soils developed in loess or in the Prairie Formation. They have a thick, dark colored surface layer and are high in organic matter content. In many places, secondary accumulations of carbonates are in the lower part of the solum.

Baldwin, Iberia, Sharkey, and Fausse soils developed in old Mississippi River alluvium. Fausse soils and the flooded phase of Sharkey soils have received additional sediments since that time. None of these soils is highly leached, and all are neutral to moderately alkaline in the solum. Sharkey and Fausse soils developed in the most clayey sediments. The major differences between the two soils are caused by differences in drainage. Sharkey soils are poorly drained and crack to a depth of 20 inches or more in most years, while Fausse soils are very poorly drained and crack less extensively and to lesser depths. Compared to Sharkey and Fausse soils, Iberia soils typically developed in sediments with slightly less clay and in generally higher positions in the landscape. Iberia soils also crack during dry seasons but generally less extensively than Sharkey soils.

Baldwin soils developed in sediments that are slightly less clayey and on higher positions than the parent materials of Iberia, Sharkey, or Fausse soils. Initially, the parent materials of Baldwin soils were somewhat better drained and more permeable than the more clayey sediments in lower parts of the landscape. Consequently, Baldwin soils are generally more leached in horizons near the surface and have more distinct profile development than the more clayey soils. Baldwin soils have a B horizon characterized by an accumulation of translocated clays and, at some locations, have secondary accumulations of carbonates in the solum. Although cracks form in Baldwin soils during dry seasons, they are less extensive than those in the more clayey Iberia and Sharkey soils.

Old natural levee deposits of the Red River were the parent materials for Gallion soils. These soils make up less than 0.5 percent of the parish and occur only in small areas along Bayou Vermilion. Other alluvial soils along the stream developed in either Mississippi River sediments or in alluvium from local sources. The parent materials of the Gallion soils were deposited at a time when the stream was carrying at least a part of the flow of the Red River in channels that had previously been occupied by the Mississippi River or its tributaries (*12*). Work by Saucier (*21*) and others indicated that the time of deposition was between 4,000 and 5,500 years ago.

Gallion soils are unique in the parish in that they are much redder throughout than the other soils. The soil colors are largely inherited from the parent material and are not appreciably different in color from the present-day natural levee deposits along the Red River in Louisiana. Gallion soils are characterized by a B horizon of **secondary accumulations of clay and by reaction that in-**creases with depth. In many areas the lower part of the solum has secondary accumulations of carbonates.

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Glossary

Alluvial plain (geologic). The deposited stream-born material built up on the valley bottoms to form an alluvial plain extending from valley wall to valley wall. The major alluvial plain in Lafayette Parish is the Mississippi River Alluvial Plain.

Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coat, clay skin.

Complex, soil. A map unit of two or more kinds of soil occurring in such an intricate pattern that they cannot be shown separately on a soil map at the selected scale of mapping and publication.

Compressible. Excessive decrease in volume of soft soil under load.

Concretions. Grains, pellets, or nodules of various sizes, shapes, and colors consisting of concentrated compounds or cemented soil grains. The composition of most concretions is unlike that of the surrounding soil. Calcium carbonate and iron oxide are common compounds in concretions.

Consistence, soil. The feel of the soil and the ease with which a lump can be crushed by the fingers. Terms commonly used to describe consistence are—

Loose.—Noncoherent when dry or moist; does not hold together in a mass.

Friable.—When moist, crushes easily under gentle pressure between thumb and forefinger and can be pressed together into a lump.

Firm.—When moist, crushes under moderate pressure between thumb and forefinger, but resistance is distinctly noticeable.

Plastic.—When wet, readily deformed by moderate pressure but can be pressed into a lump; will form a "wire" when rolled between thumb and forefinger.

Sticky.—When wet, adheres to other material and tends to stretch somewhat and pull apart rather than to pull free from other material.

Hard.—When dry, moderately resistant to pressure; can be broken with difficulty between thumb and forefinger.

Soft.—When dry, breaks into powder or individual grains under very slight pressure.

Cemented.—Hard; little affected by moistening.

Contour farming. Plowing, cultivating, planting, and harvesting in rows that are at right angles to the natural direction of the slope or that are parallel to terrace grade.

Crawfish farming. The commercial production of crawfish in managed ponds. The ponds are generally one of three types: rice fields, open ponds, and wooded or swampland ponds.

Cutbanks cave. Unstable walls of cuts made by earthmoving equipment. The soil sloughs easily.

Drainage class (natural). Refers to the frequency and duration of periods of saturation or partial saturation during soil formation, as opposed to altered drainage, which is commonly the result of artificial drainage or irrigation but may be caused by the sudden deepening of channels or the blocking of drainage outlets. Seven classes of natural soil drainage are recognized:

Excessively drained.—Water is removed from the soil very rapidly. Excessively drained soils are commonly very coarse textured, rocky, or shallow. Some are steep. All are free of the mottling related to wetness.

Somewhat excessively drained.—Water is removed from the soil rapidly. Many somewhat excessively drained soils are sandy and rapidly pervious. Some are shallow. Some are so steep that much of the water they receive is lost as runoff. All are free of the mottling related to wetness.

Well drained.—Water is removed from the soil readily, but not rapidly. It is available to plants throughout most of the growing season, and wetness does not inhibit growth of roots for significant periods during most growing seasons. Well drained soils are commonly medium textured. They are mainly free of mottling.

Moderately well drained.—Water is removed from the soil somewhat slowly during some periods. Moderately well drained soils are wet for only a short time during the growing season, but periodically for long enough that most mesophytic crops are affected. They commonly have a slowly pervious layer within or directly below the solum, or periodically receive high rainfall, or both.

Somewhat poorly drained.—Water is removed slowly enough that the soil is wet for significant periods during the growing season. Wetness markedly restricts the growth of mesophytic crops unless artificial drainage is provided. Somewhat poorly drained soils commonly have a slowly pervious layer, a high water table, additional water from seepage, nearly continuous rainfall, or a combination of these.

Poorly drained.—Water is removed so slowly that the soil is saturated periodically during the growing season or remains wet for long periods. Free water is commonly at or near the surface for long enough during the growing season that most mesophytic crops cannot be grown unless the soil is artificially drained. The soil is not continuously saturated in layers directly below plow depth. Poor drainage results from a high water table, a slowly pervious layer within the profile, seepage, nearly continuous rainfall, or a combination of these.

Very poorly drained.—Water is removed from the soil so slowly that free water remains at or on the surface during most of the growing season. Unless the soil is artificially drained, most mesophytic crops cannot be grown. Very poorly drained soils are commonly level or depressed and are frequently ponded. Yet, where rainfall is high and nearly continuous, they can have moderate or high slope gradients, as for example in "hillpeats" and "climatic moors."

Erosion. The wearing away of the land surface by running water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of the activities of man or other animals or of a catastrophe in nature, for example, fire, that exposes a bare surface.

Excess fines. Excess silt and clay. The soil does not provide a source of gravel or sand for construction purposes.

Fallow. Cropland left idle in order to restore productivity through accumulation of moisture. Summer fallow is common in regions of limited rainfall where cereal grains are grown. The soil is tilled for at least one growing season for weed control and decomposition of plant residue.

Favorable. Favorable soil features for the specified use.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Flooding. The temporary covering of soil with water from overflowing streams, runoff from adjacent slopes, and tides. Frequency, duration, and probable dates of occurrence are estimated. Frequency is expressed as none, rare, occasional, and frequent. *None* means that flooding is not probable; *rare* that it is unlikely but possible under unusual weather conditions; *occasional* that it occurs on an average of once or less in 2 years; and *frequent* that it occurs on an average of more than once in 2 years. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, and *long* if more than 7 days. Probable dates are expressed in months; *November-May*, for example, means that flooding can occur during the period November through May. Water standing for short periods after rainfall or commonly covering swamps and marshes is not considered flooding.

Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

Gully. A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. The major horizons of mineral soil are as follows:

O horizon.—An organic layer, fresh and decaying plant residue, at the surface of a mineral soil.

A horizon.—The mineral horizon, formed or forming at or near the surface, in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon most of which was originally part of a B horizon.

A2 horizon.—A mineral horizon, mainly a residual concentration of sand and silt high in content of resistant minerals as a result of the loss of silicate clay, iron, aluminum, or a combination of these.

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of change from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics caused (1) by accumulation of clay, sesquioxides, humus, or a combination of these; (2) by prismatic or blocky structure; (3) by redder or browner colors than those in the A horizon; or (4) by a combination of these. The combined A and B horizons are generally called the solum, or true soil. If a soil lacks a B horizon, the A horizon alone is the solum.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the A or B horizon. The material of a C horizon may be either like or unlike that from which the solum is presumed to have formed. If the material is known to differ from that in the solum the Roman numeral II precedes the letter C.

R layer.—Consolidated rock beneath the soil. The rock commonly underlies a C horizon, but can be directly below an A or a B horizon.

Lime. Chemically, lime is calcium oxide, but its meaning has been extended to include all limestone-derived materials applied to neutralize acid soils.

Loess. Fine grained material, dominantly of silt-sized particles, deposited by wind.

Low strength. Inadequate strength for supporting loads.

Mottling, soil. Irregular spots of different colors that vary in number and size. Mottling generally indicates poor aeration and impeded drainage. Descriptive terms are as follows: abundance—*few*, *common*, and *many;* size—*fine*, *medium*, and *coarse;* and contrast—*faint*, *distinct*, and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium*, from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse*, more than 15 millimeters (about 0.6 inch).

Natural levee. A low, ridgelike deposit immediately adjacent to the stream channel. It forms from the coarser and heavier material carried by floodwater and deposited when the velocity of the water is checked as it left the river channel and spread over the flood plain. The height of the levee generally indicates the difference in stage level between ordinary floods and low water. The average levee is slightly more than a mile wide and less than 15 feet high. It slopes downward from the river's edge to the backswamp areas at an average rate of 3 or 4 feet per mile.

Organic matter. A general term for plant and animal material, in or on the soil, in all stages of decomposition. Readily decomposed organic matter is often distinguished from the more stable forms that are past the stage of rapid decomposition.

Parent material. The great variety of unconsolidated organic and mineral material in which soil forms. Consolidated bedrock is not yet parent material by this concept.

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Percs slowly. The slow movement of water through the soil adversely affecting the specified use.

Permeability. The quality that enables the soil to transmit water or air, measured as the number of inches per hour that water moves through the soil. Terms describing permeability are *very slow* (less than 0.06 inch), *slow* (0.06 to 0.20 inch), *moderately slow* (0.2 to 0.6 inch), *moderate* (0.6 to 2.0 inches), *moderately rapid* (2.0 to 6.0 inches), *rapid* (6.0 to 20 inches), and *very rapid* (more than 20 inches).

pH value. (See Reaction, soil). A numerical designation of acidity and alkalinity in soil.

Reaction, soil. The degree of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degree of acidity or alkalinity is expressed as—

	pH
Extremely acid	Below 4.5
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Medium acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Mildly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Relief. The elevations or inequalities of a land surface, considered collectively.

Seepage. The rapid movement of water through the soil. Seepage adversely affects the specified use.

Shrink-swell. The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Slickensides. Polished and grooved surfaces produced by one mass sliding past another. In soils, slickensides may occur at the bases of slip surfaces on the steeper slopes; on faces of blocks, prisms, and columns; and in swelling clayey soils, where there is marked change in moisture content.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance.

Soil. A natural, three-dimensional body at the earth's surface that is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

Stripcropping. Growing crops in a systematic arrangement of strips or bands which provide vegetative barriers to wind and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates that are separated from adjoining aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grained* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

Surface soil. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the "plow layer," or the "Ap horizon."

Terrace. An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that it can soak into the soil or flow slowly to a prepared outlet without harm. A terrace in a field is generally built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

Terrace (geologic). An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea. A stream terrace is frequently called a second bottom, in contrast with a flood plain, and is seldom subject to overflow. A marine terrace, generally wide, was deposited by the sea.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt, silt loam, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay*, and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Thin layer. Otherwise suitable soil material too thin for the specified use.

Tilth, soil. The condition of the soil, especially the soil structure, as related to the growth of plants. Good tilth refers to the friable state and is associated with high noncapillary porosity and stable structure. A soil in poor tilth is nonfriable, hard, nonaggregated, and difficult to till.

Upland (geology). Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Illustrations

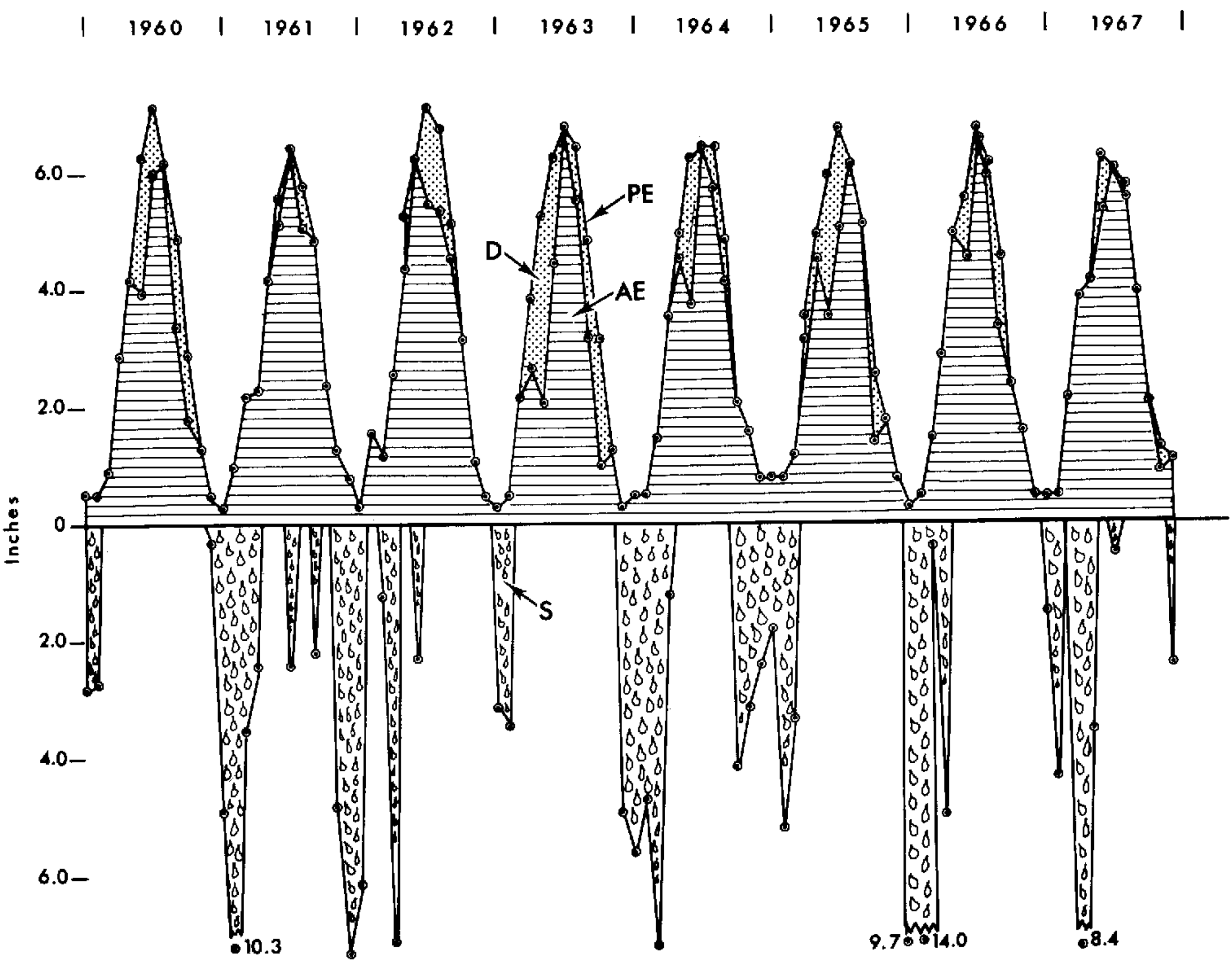

Figure 1.—Water budget data for Lafayette Parish.

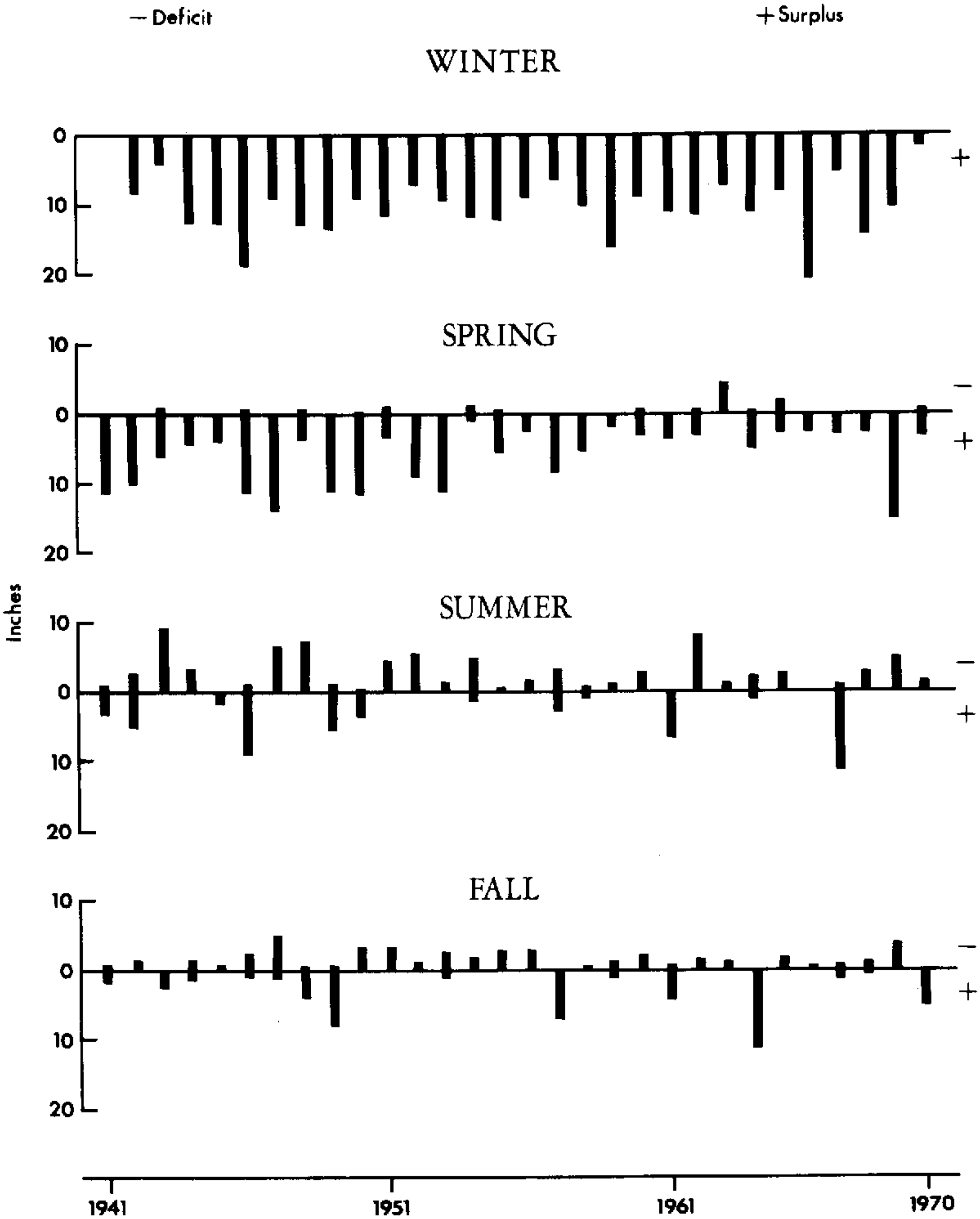

Figure 2.—Frequency of monthly surpluses and deficits in the water budget.

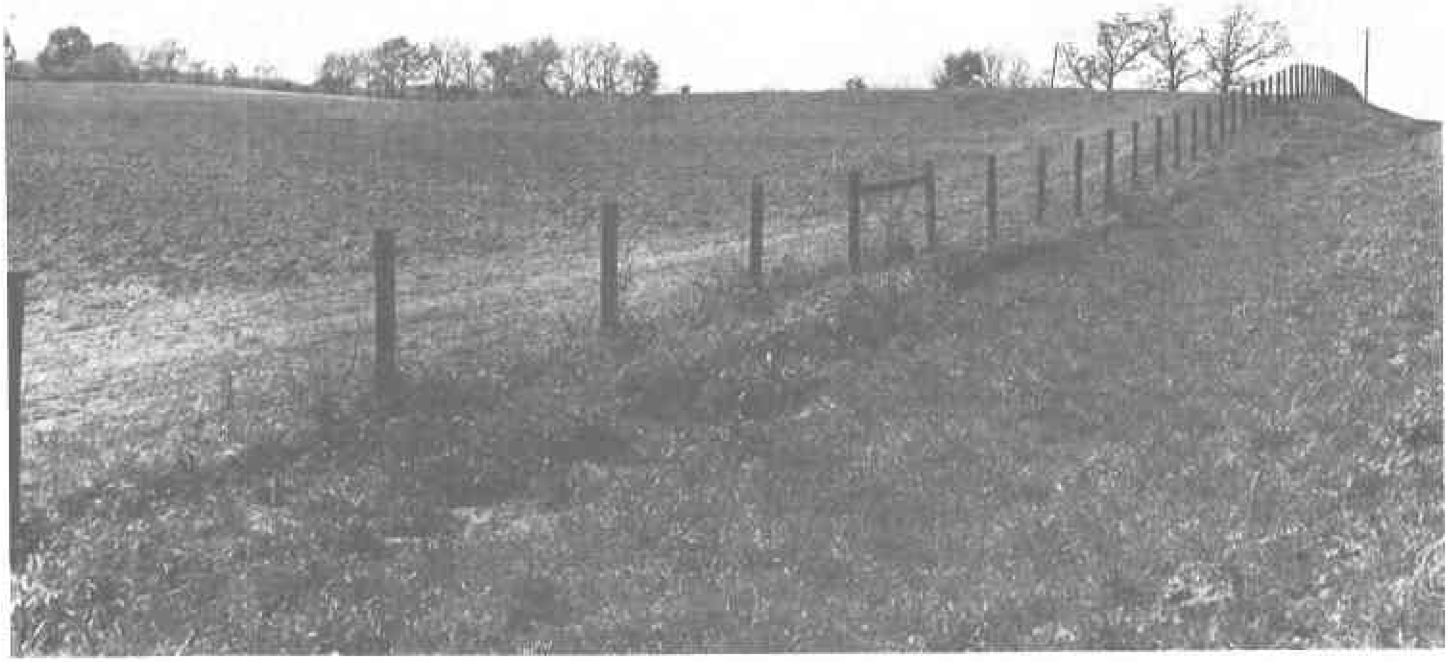

Figure 3.—Escarpment between the terrace upland and the Mississippi River alluvial plain.

Figure 4.—Urban development on Memphis silt loam, 0 to 1 percent slopes.

Figure 5.—Area of the Coteau-Frost complex. The Frost soil is in the darker area in the swale.

Figure 6.—Golf course on Memphis silt loam, 0 to 1 percent slopes.

Figure 7.—Sugarcane on Memphis silt loam, 1 to 5 percent slopes.

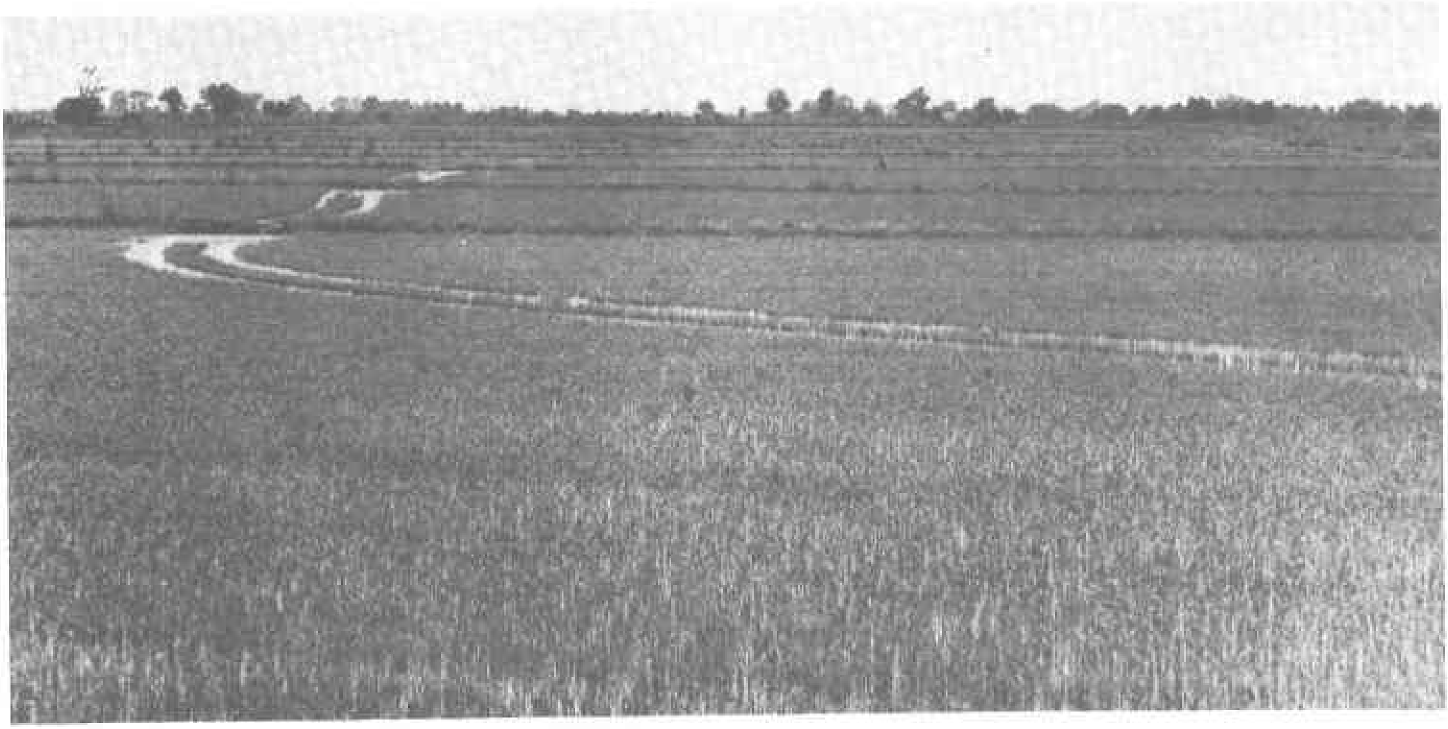

Figure 8.—Irrigated rice on Patoutville silt loam.

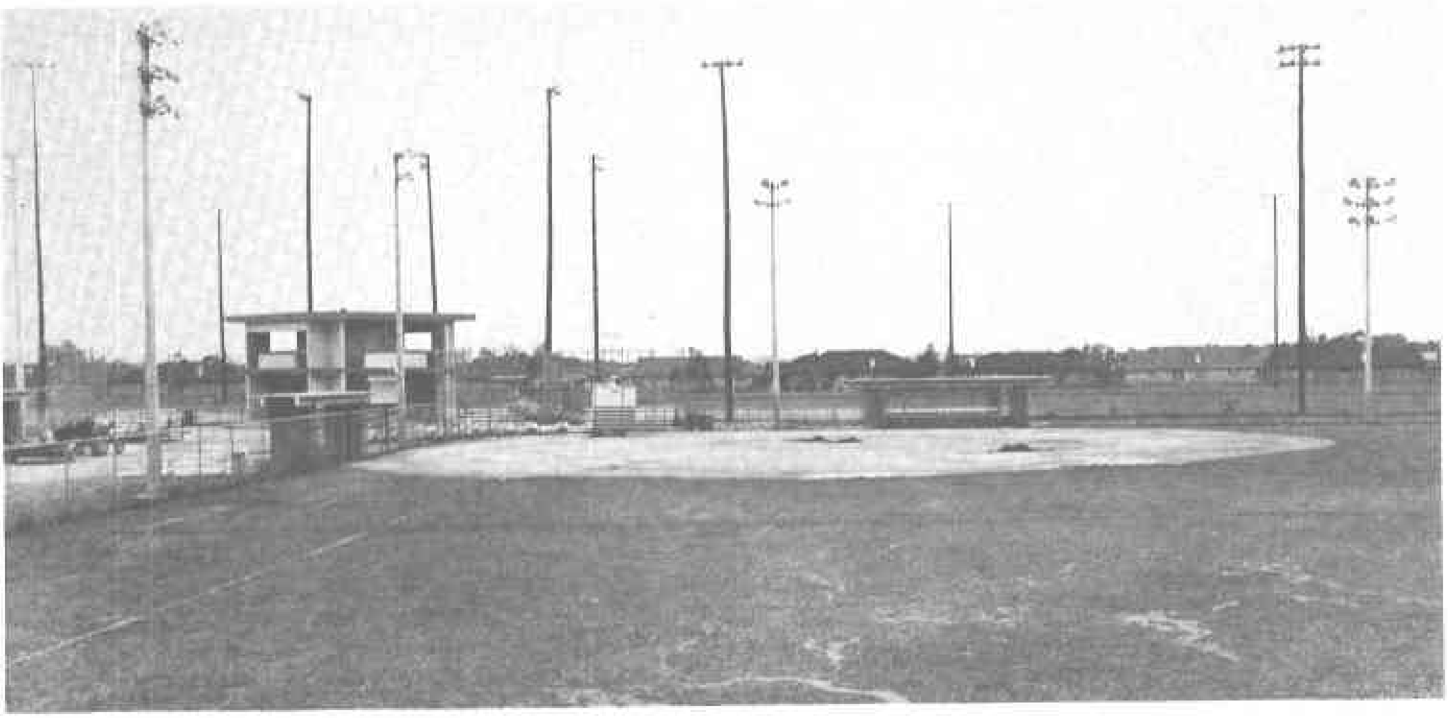

Figure 9.—Baseball field on Coteau silt loam, 0 to 1 percent slopes.

Tables

TABLE 1.--TEMPERATURE AND PRECIPITATION DATA

[Data measured at Lafayette in a standard weather shelter. Period of record 1941-70]

Month	Temperature						Precipitation		
	Average daily maximum	Average daily minimum	Extreme maximum	Extreme minimum	2 years in 10 will have-- Maximum higher than--	2 years in 10 will have-- Minimum lower than--	Average	1 year in 10 will have-- Less than--	1 year in 10 will have-- More than--
	F	F	F	F	F	F	In	In	In
January-----	62	42	83	12	79	23	4.7	2.0	8.0
February----	65	45	87	13	82	26	4.6	2.2	7.7
March-------	71	50	90	24	85	31	4.6	1.9	7.0
April-------	79	59	92	35	89	41	4.7	1.9	8.5
May---------	86	64	97	44	94	48	5.2	2.4	7.3
June--------	91	70	102	54	97	60	4.6	1.3	9.3
July--------	91	72	102	61	99	67	7.0	3.3	12.7
August------	91	72	103	59	99	63	5.0	2.6	8.0
September---	88	68	101	45	95	53	4.7	2.2	8.0
October-----	81	57	94	31	92	37	3.4	0.9	7.5
November----	71	48	87	24	86	28	3.4	0.5	7.5
December----	64	44	83	15	81	23	5.1	3.0	8.6
Year------	--	--	103	12	--	--	57.0	45.1	67.4

TABLE 2.--FREEZE DATES IN SPRING AND FALL

[Data from Lafayette. Period of record 1941-70]

Probability	Minimum temperature		
	24° F or lower	28° F or lower	32° F or lower
Spring:			
1 year in 10 later than--	February 4	March 1	March 21
2 years in 10 later than--	January 29	February 18	March 10
5 years in 10 later than--	January 17	February 3	February 20
Fall:			
1 year in 10 earlier than--	December 10	November 20	November 3
2 years in 10 earlier than--	December 19	November 27	November 10
5 years in 10 earlier than--	December 24	December 10	November 24

TABLE 3.--POTENTIALS AND LIMITATIONS OF MAP UNITS FOR SPECIFIED USES

Map unit	Extent of area	Cultivated farm crops	Urban uses	Intensive recreation areas	Pastureland
	Pct				
1. Sharkey-Baldwin-Iberia-	6	Good: high fertility, medium yields, needs drainage, difficult to work and prepare seedbeds, fairly narrow choice of crops, surface layer wet for long periods.	Poor: wetness, seasonal high water table, occasional flooding at low elevations, poor engineering characteristics.	Poor: seasonal high water table, too clayey, high shrink-swell potential, well suited to water impoundments.	Good: high fertility, needs drainage, wide choice of pasture plants, lime generally not needed.
2. Acy-Coteau---------------	2.5	Very good: medium fertility, responds well to fertilizers, wide choice of crops, high yields, needs drainage in places, needs lime in places.	Fair: wetness, seasonal high water table, rare flooding, fair engineering characteristics.	Fair: wetness, seasonal high water table, suited to water impoundments, soil easy to work, wet in low areas.	Very good: medium fertility, wide choice of pasture plants, generally does not need drainage, needs lime in places.
3. Memphis-Frost-----------	22.5	Good: medium fertility, medium to high yields, needs drainage in lows, easy to work and prepare seedbeds, wide choice of crops, needs erosion control, needs lime, responds well to fertilizers.	Good: no flooding on highs, common flooding in lows; fair engineering characteristics, wet in lows.	Good: fair to poor suitability for water impoundments, soil easy to work, well drained on highs, wet in lows.	Good: medium fertility, needs drainage in lows in places, wide choice of pasture plants, responds well to fertilizers, needs lime.
4. Coteau-Frost------------	27	Good: medium fertility, medium yields, needs drainage in lows, easy to work and prepare seedbeds, wide choice of crops, needs lime, responds well to fertilizers.	Fair: no flooding on highs, common flooding in lows, seasonal high water table, fair engineering characteristics, wetness in lows.	Fair: wetness, suited to water impoundments, soil easy to work, severe wetness in low areas, seasonal high water table.	Good: medium fertility, needs drainage in lows in places, wide choice of pasture plants, needs lime, responds well to fertilizers.
5. Patoutville-Frost-------	27	Good: medium fertility, medium yields, needs drainage in lows, easy to work and prepare seedbeds, wide choice of crops, needs lime, responds well to fertilizers.	Fair: rare flooding on highs, flooding in lows, seasonal high water table, wetness in lows, fair engineering characteristics.	Fair: wetness, seasonal high water table, suited to water impoundments, soil easy to work, severe wetness in low areas.	Good: medium fertility, needs drainage in lows in places, wide choice of pasture plants, needs lime, responds well to fertilizers.

TABLE 3.--POTENTIALS AND LIMITATIONS OF MAP UNITS FOR SPECIFIED USES--Continued

Map unit	Extent of area	Cultivated farm crops	Urban uses	Intensive recreation areas	Pastureland
	Pct				
6. Jeanerette----------------	13	Very good: high fertility, wide choice of crops, high yields, needs drainage in places, does not need lime, easy to work and prepare seed-bed, responds well to fertilizers.	Fair: wetness, seasonal high water table, rare flooding, fair engineering characteristics.	Fair: wetness, seasonal high water table, suited to water impoundments, easy to work.	Very good: high fertility, wide choice of plants, generally does not need drainage, does not need lime.
7. Fausse-Sharkey-----------	2	Very poor: subject to frequent flooding, permanent high water table in lows.	Very poor: subject to frequent flooding, permanent high water table in lows; poor engineering characteristics.	Very poor: subject to frequent flooding, poor traffic-supporting capacity, well suited to water impoundments.	Very poor: subject to frequent flooding, poor traffic-supporting capacity, narrow choice of pasture plants.

TABLE 4.--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS

Map symbol	Soil name	Acres	Percent
1	Acy silt loam	2,128	1.2
2	Baldwin silty clay loam	3,126	1.7
3	Basile soils, frequently flooded	573	0.3
4	Coteau-Frost complex	1,661	0.9
5	Coteau silt loam, 0 to 1 percent slopes	23,807	13.2
6	Coteau silt loam, 1 to 3 percent slopes	5,799	3.2
7	Crowley silt loam	2,920	1.6
8	Fausse association	2,459	1.4
9	Frost silt loam	38,954	21.5
10	Frost soils, occasionally flooded	4,147	2.3
11	Gallion silt loam	573	0.3
12	Iberia silty clay	2,976	1.6
13	Jeanerette silt loam	15,940	8.8
14	Haplaquolls, occasionally flooded	306	0.2
17	Memphis silt loam, 0 to 1 percent slopes	19,088	10.5
18	Memphis silt loam, 1 to 5 percent slopes	12,300	6.8
19	Memphis silt loam, 5 to 8 percent slopes	2,038	1.1
21	Judice silty clay loam	3,079	1.7
22	Mowata-Frost complex	6,359	3.5
23	Patoutville silt loam	25,651	14.2
24	Sharkey clay	3,218	1.8
25	Sharkey clay, frequently flooded	2,336	1.3
26	Udifluvents, loamy	757	0.4
	Water	925	0.5
	Total	181,120	100.0

TABLE 5.--YIELDS PER ACRE OF CROPS AND PASTURE

[Yields in columns N are for nonirrigated soils; those in columns I are for irrigated soils. All yields were estimated for a high level of management in 1975. Absence of a yield figure indicates the crop is seldom grown or is not suited]

Soil name and map symbol	Sugarcane		Soybeans		Sweet potatoes		Rice		Common bermudagrass		Bahiagrass	
	N	I	N	I	N	I	N	I	N	I	N	I
	Ton	Ton	Bu	Bu	Bu	Bu	Bu	Bu	AUM*	AUM*	AUM*	AUM*
1 Acy	30	---	35	---	250	---	---	110	8.0	---	9.5	---
2 Baldwin	30	---	33	---	---	---	---	120	7.0	---	7.6	---
3 Basile	---	---	---	---	---	---	---	---	4.0	---	5.0	---
4** Coteau	29	---	32	---	226	---	---	---	5.5	---	7.5	---
5 Coteau	30	---	35	---	250	---	---	110	5.5	---	6.5	---
6 Coteau	27	---	32	---	240	---	---	---	5.5	---	6.5	---
7 Crowley	---	---	30	---	---	---	---	115	5.5	---	7.5	---
8** Fausse	---	---	---	---	---	---	---	---	---	---	---	---
9 Frost	30	---	30	---	200	---	---	105	5.5	---	6.0	---
10 Frost	---	---	25	---	---	---	---	---	5.5	---	6.0	---
11 Gallion	33	---	40	---	---	---	---	---	7.0	---	9.5	---
12 Iberia	26	---	35	---	---	---	---	120	6.5	---	8.0	---
13 Jeanerette	32	---	37	---	---	---	---	110	8.0	---	9.5	---
17 Memphis	30	---	35	---	275	---	---	---	8.0	---	9.5	---
18 Memphis	28	---	30	---	250	---	---	---	7.5	---	9.0	---
19 Memphis	26	---	28	---	225	---	---	---	7.0	---	8.0	---
21 Judice	26	---	35	---	---	---	---	120	6.5	---	7.5	---
22** Mowata	30	---	28	---	200	---	---	113	5.5	---	6.0	---
23 Patoutville	28	---	30	---	250	---	---	110	6.0	---	6.5	---
24 Sharkey	30	---	35	---	---	---	---	120	6.5	---	8.0	---
25 Sharkey	---	---	---	---	---	---	---	---	5.0	---	6.0	---

* Animal-unit-month: The amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for a period of 30 days.
** See map unit description for the composition and behavior of the map unit.

TABLE 6.--WOODLAND MANAGEMENT AND PRODUCTIVITY

[Only the soils suitable for production of commercial trees are listed in this table. Absence of an entry in a column means the information was not available]

Soil name and map symbol	Ordination symbol	Management concerns: Erosion hazard	Management concerns: Equipment limitation	Management concerns: Seedling mortality	Potential productivity: Important trees	Potential productivity: Site index	Trees to plant
1 Acy	2w5	Slight	Moderate	Slight	Green ash Eastern cottonwood Water oak Pecan American sycamore Cherrybark oak	80 120 --- --- --- 90	Eastern cottonwood.
2 Baldwin	2w6	Slight	Severe	Moderate	Green ash Eastern cottonwood Water oak Sweetgum American sycamore	80 100 90 90 ---	Eastern cottonwood, American sycamore.
4*:							
Coteau	1w8	Slight	Moderate	Slight	Loblolly pine Slash pine Water oak Cherrybark oak	100 --- 90 90	Loblolly pine, slash pine.
Frost	2w9	Slight	Severe	Moderate	Cherrybark oak Water oak Loblolly pine Slash pine Sweetgum	--- --- 90 90 ---	Loblolly pine, slash pine.
5, 6 Coteau	1w8	Slight	Moderate	Slight	Loblolly pine Slash pine Water oak Cherrybark oak	100 --- 90 90	Loblolly pine, slash pine.
7 Crowley	2w9	Slight	Severe	Moderate	Slash pine Loblolly pine	90 90	Slash pine, loblolly pine.
8* Fausse	4w6	Slight	Severe	Severe	Green ash Baldcypress Water hickory Water tupelo	70 90 90 90	Baldcypress.
9, 10 Frost	2w9	Slight	Severe	Moderate	Cherrybark oak Water oak Loblolly pine Slash pine Sweetgum	--- --- 90 90 ---	Loblolly pine, slash pine.
11 Gallion	2o4	Slight	Slight	Slight	Green ash Cherrybark oak Sweetgum Water oak Pecan American sycamore Eastern cottonwood	80 95 83 --- --- --- 100	Eastern cottonwood, American sycamore.
12 Iberia	2w6	Slight	Severe	Severe	Green ash Eastern cottonwood Sweetgum	80 95 90	Eastern cottonwood.
13 Jeanerette	2w5	Slight	Moderate	Slight	Green ash Eastern cottonwood Water oak Pecan American sycamore Cherrybark oak	80 120 --- --- --- 90	Eastern cottonwood.

See footnote at end of table.

TABLE 6.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Ordi-nation symbol	Management concerns: Erosion hazard	Management concerns: Equipment limitation	Management concerns: Seedling mortality	Potential productivity: Important trees	Potential productivity: Site index	Trees to plant
17, 18, 19 Memphis	1o7	Slight	Slight	Slight	Cherrybark oak Loblolly pine Sweetgum Water oak	100 105 90 90	Slash pine, loblolly pine, yellow-poplar.
21 Judice	2w9	Slight	Severe	Severe		---	Eastern cottonwood, American sycamore.
22*:							
Mowata	2w9	Slight	Severe	Moderate	Loblolly pine Slash pine Sweetgum	--- --- ---	Loblolly pine, slash pine.
Frost	2w9	Slight	Severe	Moderate	Cherrybark oak Water oak Loblolly pine Slash pine Sweetgum	--- --- 90 90 ---	Loblolly pine, slash pine.
23 Patoutville	1w8	Slight	Moderate	Slight	Loblolly pine Slash pine Sweetgum Water oak Cherrybark oak	99 99 86 --- 93	Loblolly pine, slash pine.
24 Sharkey	2w6	Slight	Severe	Moderate	Green ash Eastern cottonwood Cherrybark oak Sweetgum Water oak Baldcypress American sycamore Sugarbery	85 100 90 90 --- --- --- ---	Eastern cottonwood, American sycamore.
25 Sharkey	3w6	Slight	Severe	Severe	Green ash Eastern cottonwood Water hickory Sugarberry Black willow Baldcypress	--- --- --- --- --- ---	Eastern cottonwood.

* See map unit description for the composition and behavior of the map unit.

TABLE 7.--BUILDING SITE DEVELOPMENT

[Some of the terms used in this table to describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe."]

Soil name and map symbol	Shallow excavations	Dwellings without basements	Small commercial buildings	Local roads and streets
1-----------------Acy	Severe: wetness.	Moderate: wetness, shrink-swell, low strength.	Moderate: wetness, shrink-swell, low strength.	Severe: low strength.
2-----------------Baldwin	Severe: wetness, too clayey.	Severe: wetness, low strength, shrink-swell.	Severe: wetness, low strength, shrink-swell.	Severe: wetness, low strength, shrink-swell.
3-----------------Basile	Severe: wetness, floods, cutbanks cave.	Severe: wetness, floods.	Severe: wetness, floods.	Severe: wetness, floods.
4*:				
Coteau------------	Severe: wetness.	Moderate: wetness, shrink-swell, low strength.	Moderate: wetness, shrink-swell, low strength.	Moderate: wetness, shrink-swell, low strength.
Frost-------------	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness, low strength.
5, 6--------------Coteau	Severe: wetness.	Moderate: wetness, shrink-swell, low strength.	Moderate: wetness, shrink-swell, low strength.	Moderate: wetness, shrink-swell, low strength.
7-----------------Crowley	Severe: wetness, too clayey.	Severe: shrink-swell, low strength, wetness.	Severe: shrink-swell, low strength, wetness.	Severe: low strength, shrink-swell.
8*----------------Fausse	Severe: floods, too clayey, wetness.	Severe: floods, wetness, shrink-swell.	Severe: floods, wetness, shrink-swell.	Severe: floods, wetness, shrink-swell.
9-----------------Frost	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness, low strength.
10----------------Frost	Severe: wetness, floods.	Severe: floods, wetness.	Severe: floods, wetness.	Severe: wetness, low strength.
11----------------Gallion	Slight---------------	Moderate: low strength, shrink-swell.	Moderate: low strength, shrink-swell.	Moderate: low strength, shrink-swell.
12----------------Iberia	Severe: too clayey, wetness.	Severe: wetness, low strength, shrink-swell.	Severe: wetness, low strength, shrink-swell.	Severe: wetness, shrink-swell, low strength.
13----------------Jeanerette	Severe: wetness.	Moderate: wetness, shrink-swell, low strength.	Moderate: wetness, shrink-swell, low strength.	Severe: low strength.

See footnote at end of table.

TABLE 7.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Small commercial buildings	Local roads and streets
17, 18------------- Memphis	Slight-----------------	Moderate: low strength.	Moderate: low strength.	Moderate: low strength.
19----------------- Memphis	Slight-----------------	Moderate: low strength.	Moderate: low strength, slope.	Moderate: low strength.
21----------------- Judice	Severe: too clayey, wetness.	Severe: wetness, low strength, shrink-swell.	Severe: wetness, low strength, shrink-swell.	Severe: wetness, shrink-swell, low strength.
22*:				
Mowata------------	Severe: wetness, too clayey.	Severe: wetness, shrink-swell, low strength.	Severe: wetness, shrink-swell, low strength.	Severe: wetness, shrink-swell, low strength.
Frost--------------	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness, low strength.
23----------------- Patoutville	Severe: wetness.	Moderate: wetness, low strength, shrink-swell.	Moderate: wetness, low strength, shrink-swell.	Severe: low strength.
24----------------- Sharkey	Severe: wetness, too clayey.	Severe: wetness, low strength, shrink-swell.	Severe: wetness, low strength, shrink-swell.	Severe: wetness, low strength, shrink-swell.
25----------------- Sharkey	Severe: wetness, too clayey.	Severe: floods, wetness, shrink-swell.	Severe: floods, wetness, shrink-swell.	Severe: floods, wetness, shrink-swell.

* See map unit description for the composition and behavior of the map unit.

TABLE 8.--SANITARY FACILITIES

[Some of the terms used in this table to describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," "good," "fair," and other terms used to rate soils.]

Soil name and map symbol	Septic tank absorption fields	Sewage lagoons	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
1 Acy	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Fair: too clayey.
2 Baldwin	Severe: wetness, percs slowly.	Slight	Severe: too clayey, wetness.	Severe: wetness.	Poor: too clayey, wetness.
3 Basile	Severe: wetness, percs slowly, floods.	Severe: wetness, floods.	Severe: wetness, floods.	Severe: wetness, floods.	Poor: wetness.
4*: Coteau	Severe: percs slowly, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Fair: too clayey.
Frost	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
5, 6 Coteau	Severe: percs slowly, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Fair: too clayey.
7 Crowley	Severe: percs slowly, wetness.	Slight	Severe: too clayey, wetness.	Severe: wetness.	Poor: too clayey.
8* Fausse	Severe: floods, percs slowly, wetness.	Severe: floods.	Severe: floods, wetness, too clayey.	Severe: floods, wetness.	Poor: too clayey, wetness.
9 Frost	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
10 Frost	Severe: wetness, percs slowly, floods.	Severe: wetness, floods.	Severe: wetness, floods.	Severe: wetness, floods.	Poor: wetness.
11 Gallion	Moderate: percs slowly.	Moderate: seepage.	Moderate: too clayey.	Slight	Fair: too clayey.
12 Iberia	Severe: wetness, percs slowly.	Slight	Severe: too clayey, wetness.	Severe: wetness.	Poor: wetness, too clayey.
13 Jeanerette	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Fair: too clayey.
17 Memphis	Slight	Moderate: seepage.	Slight	Slight	Fair: too clayey.

See footnote at end of table.

TABLE 8.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoons	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
18, 19 Memphis	Slight	Moderate: seepage, slope.	Slight	Slight	Fair: too clayey.
21 Judice	Severe: wetness, percs slowly.	Slight	Severe: too clayey, wetness.	Severe: wetness.	Poor: wetness, too clayey.
22*:					
Mowata	Severe: wetness, percs slowly.	Slight	Severe: wetness, too clayey.	Severe: wetness.	Poor: wetness.
Frost	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
23 Patoutville	Severe: percs slowly, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Fair: too clayey.
24 Sharkey	Severe: wetness, percs slowly.	Slight	Severe: wetness, too clayey.	Severe: wetness.	Poor: too clayey, wetness.
25 Sharkey	Severe: floods, wetness, percs slowly.	Severe: floods.	Severe: floods, wetness, too clayey.	Severe: floods, wetness.	Poor: too clayey, wetness.

* See map unit description for the composition and behavior of the map unit.

TABLE 9.--CONSTRUCTION MATERIALS

[Some of the terms used in this table to describe restrictive soil features are defined in the Glossary. See text for definitions of "good," "fair," "poor," and "unsuited."]

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
1 Acy	Poor: low strength.	Unsuited: excess fines.	Unsuited: excess fines.	Poor: thin layer.
2 Baldwin	Poor: wetness, low strength, shrink-swell.	Unsuited: excess fines.	Unsuited: excess fines.	Poor: wetness.
3 Basile	Poor: wetness.	Unsuited: excess fines.	Unsuited: excess fines.	Poor: wetness.
4*:				
Coteau	Fair: low strength, shrink-swell, wetness.	Unsuited: excess fines.	Unsuited: excess fines.	Poor: thin layer.
Frost	Poor: wetness, low strength.	Unsuited: excess fines.	Unsuited: excess fines.	Poor: wetness.
5, 6 Coteau	Fair: low strength, shrink-swell, wetness.	Unsuited: excess fines.	Unsuited: excess fines.	Poor: thin layer.
7 Crowley	Poor: low strength, shrink-swell.	Unsuited: excess fines.	Unsuited: excess fines.	Fair: thin layer, wetness.
8* Fausse	Poor: wetness, low strength, shrink-swell.	Unsuited: excess fines.	Unsuited: excess fines.	Poor: too clayey, wetness.
9, 10 Frost	Poor: wetness, low strength.	Unsuited: excess fines.	Unsuited: excess fines.	Poor: wetness.
11 Gallion	Fair: low strength, shrink-swell.	Unsuited: excess fines.	Unsuited: excess fines.	Fair: thin layer.
12 Iberia	Poor: low strength, shrink-swell, wetness.	Unsuited: excess fines.	Unsuited: excess fines.	Poor: too clayey, wetness.
13 Jeanerette	Poor: low strength.	Unsuited: excess fines.	Unsuited: excess fines.	Fair: thin layer.
17, 18, 19 Memphis	Fair: low strength.	Unsuited: excess fines.	Unsuited: excess fines.	Fair: too clayey.
21 Judice	Poor: low strength, shrink-swell, wetness.	Unsuited: excess fines.	Unsuited: excess fines.	Poor: wetness, too clayey.

See footnote at end of table.

TABLE 9.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
22*:				
Mowata	Poor: wetness, low strength, shrink-swell.	Unsuited: excess fines.	Unsuited: excess fines.	Poor: wetness.
Frost	Poor: wetness, low strength.	Unsuited: excess fines.	Unsuited: excess fines.	Poor: wetness.
23 Patoutville	Poor: low strength.	Unsuited: excess fines.	Unsuited: excess fines.	Fair: thin layer.
24, 25 Sharkey	Poor: low strength, shrink-swell, wetness.	Unsuited: excess fines.	Unsuited: excess fines.	Poor: wetness, too clayey.

* See map unit description for the composition and behavior of the map unit.

TABLE 10.--WATER MANAGEMENT

[Some of the terms used in this table to describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe."]

Soil name and map symbol	Limitations for--		Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Drainage	Irrigation	Terraces and diversions	Grassed waterways
1 Acy	Moderate: seepage.	Slight	Favorable	Favorable	Not needed	Favorable.
2 Baldwin	Slight	Moderate: shrink-swell, low strength, compressible.	Percs slowly	Percs slowly, slow intake, wetness.	Not needed	Wetness.
3 Basile	Slight	Moderate: erodes easily, low strength, compressible.	Percs slowly, cutbanks cave, floods.	Percs slowly, wetness.	Not needed	Wetness.
4*:						
Coteau	Slight	Slight	Not needed	Slope, erodes easily.	Erodes easily	Favorable.
Frost	Slight	Slight	Percs slowly	Percs slowly, wetness.	Not needed	Wetness.
5 Coteau	Slight	Slight	Favorable	Favorable	Not needed	Favorable.
6 Coteau	Slight	Slight	Not needed	Slope, erodes easily.	Erodes easily	Favorable.
7 Crowley	Slight	Moderate: compressible, low strength.	Percs slowly	Slow intake, percs slowly.	Not needed	Favorable.
8* Fausse	Slight	Moderate: shrink-swell, compressible, low strength.	Floods, percs slowly, poor outlets.	Floods, percs slowly, wetness.	Not needed	Not needed.
9 Frost	Slight	Slight	Percs slowly	Percs slowly, wetness.	Not needed	Wetness.
10 Frost	Slight	Slight	Floods, percs slowly.	Floods, percs slowly, wetness.	Not needed	Wetness.
11 Gallion	Moderate: seepage.	Slight	Favorable	Favorable	Not needed	Favorable.
12 Iberia	Slight	Moderate: compressible, low strength, shrink-swell.	Percs slowly	Slow intake, wetness.	Not needed	Wetness.
13 Jeanerette	Moderate: seepage.	Slight	Favorable	Favorable	Not needed	Favorable.
17, 18, 19 Memphis	Moderate: seepage.	Moderate: piping, compressible, erodes easily.	Not needed	Erodes easily, slope.	Erodes easily, slope, piping.	Erodes easily, slope.
21 Judice	Slight	Moderate: compressible, low strength, shrink-swell.	Percs slowly	Slow intake, wetness, percs slowly.	Not needed	Wetness, percs slowly.

See footnote at end of table.

TABLE 10.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
22*:						
Mowata	Slight	Moderate: shrink-swell, low strength, compressible.	Percs slowly	Wetness, percs slowly.	Not needed	Wetness.
Frost	Slight	Slight	Percs slowly	Percs slowly, wetness.	Not needed	Wetness.
23 Patoutville	Slight	Slight	Percs slowly	Wetness, percs slowly.	Not needed	Favorable.
24 Sharkey	Slight	Moderate: low strength, compressible, shrink-swell.	Complex slope	Percs slowly, slow intake, wetness.	Not needed	Wetness.
25 Sharkey	Slight	Moderate: low strength, compressible, shrink-swell.	Floods, percs slowly.	Floods, percs slowly.	Not needed	Wetness.

* See map unit description for the composition and behavior of the map unit.

TABLE 11.--RECREATIONAL DEVELOPMENT

[Some of the terms used in this table to describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe."]

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails
1----- Acy	Moderate: wetness, percs slowly.	Moderate: wetness.	Moderate: wetness, percs slowly.	Moderate: wetness.
2----- Baldwin	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness, percs slowly.	Severe: wetness.
3----- Basile	Severe: wetness, floods.	Severe: wetness, floods.	Severe: wetness, floods.	Severe: wetness, floods.
4*:				
Coteau-----	Moderate: wetness, percs slowly.	Moderate: wetness.	Moderate: percs slowly, wetness.	Moderate: wetness.
Frost-----	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
5, 6----- Coteau	Moderate: wetness, percs slowly.	Moderate: wetness.	Moderate: percs slowly, wetness.	Moderate: wetness.
7----- Crowley	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness, percs slowly.	Severe: wetness.
8*----- Fausse	Severe: floods, wetness, too clayey.	Severe: floods, wetness, too clayey.	Severe: floods, wetness, too clayey.	Severe: floods, wetness, too clayey.
9----- Frost	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
10----- Frost	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.
11----- Gallion	Slight-----	Slight-----	Slight-----	Slight.
12----- Iberia	Severe: percs slowly, too clayey, wetness.	Severe: too clayey, wetness.	Severe: percs slowly, too clayey, wetness.	Severe: too clayey, wetness.
13----- Jeanerette	Moderate: wetness, percs slowly.	Moderate: wetness.	Moderate: wetness, percs slowly.	Moderate: wetness.
17----- Memphis	Slight-----	Slight-----	Slight-----	Slight.
18----- Memphis	Slight-----	Slight-----	Moderate: slope.	Slight.

See footnote at end of table.

TABLE 11.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails
19 Memphis	Slight	Slight	Severe: slope.	Slight.
21 Judice	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness, percs slowly.	Severe: wetness.
22*:				
Mowata	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness, percs slowly.	Severe: wetness.
Frost	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
23 Patoutville	Moderate: percs slowly, wetness.	Moderate: wetness.	Moderate: wetness, percs slowly.	Moderate: wetness.
24 Sharkey	Severe: too clayey, percs slowly, wetness.	Severe: too clayey, wetness.	Severe: too clayey, percs slowly, wetness.	Severe: too clayey, wetness.
25 Sharkey	Severe: floods, too clayey, percs slowly.	Severe: floods, too clayey, wetness.	Severe: floods, too clayey, percs slowly.	Severe: floods, too clayey, wetness.

* See map unit description for the composition and behavior of the map unit.

TABLE 12.--WILDLIFE HABITAT POTENTIALS

[See text for definitions of "good," "fair," "poor," and "very poor." Absence of an entry indicates the soil was not rated]

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
1----- Acy	Good	Good	Good	Good	---	Fair	Fair	Good	Good	Fair.
2----- Baldwin	Fair	Fair	Fair	Good	---	Good	Good	Fair	Good	Good.
3----- Basile	Poor	Fair	Fair	Fair	---	Good	Good	Fair	Fair	Good.
4*:										
Coteau-----	Fair	Good	Good	Good	---	Fair	Fair	Good	Good	Fair.
Frost-----	Poor	Fair	Fair	Good	---	Good	Good	Fair	Good	Good.
5, 6----- Coteau	Fair	Good	Good	Good	---	Fair	Fair	Good	Good	Fair.
7----- Crowley	Fair	Fair	Fair	Fair	---	Good	Good	Fair	Fair	Good.
8*----- Fausse	Very poor.	Very poor.	Very poor.	Poor	---	Good	Good	Very poor.	Poor	Good.
9, 10----- Frost	Poor	Fair	Fair	Good	---	Good	Good	Fair	Good	Good.
11----- Gallion	Good	Good	Good	Good	---	Poor	Very poor.	Good	Good	Very poor.
12----- Iberia	Fair	Fair	Fair	Good	---	Good	Good	Fair	Good	Good.
13----- Jeanerette	Good	Good	Good	Good	---	Fair	Fair	Good	Good	Fair.
17, 18----- Memphis	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
19----- Memphis	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
21----- Judice	Fair	Fair	Fair	Good	---	Good	Good	Fair	Good	Good.
22*:										
Mowata-----	Poor	Fair	Good	Fair	---	Good	Good	Fair	Fair	Good.
Frost-----	Poor	Fair	Fair	Good	---	Good	Good	Fair	Good	Good.
23----- Patoutville	Good	Good	Good	---	Good	Fair	Fair	Good	Good	Fair.
24----- Sharkey	Fair	Fair	Fair	Good	---	Good	Good	Fair	Good	Good.
25----- Sharkey	Poor	Fair	Fair	Good	---	Fair	Fair	Poor	Fair	Fair.

* See map unit description for the composition and behavior of the map unit.

TABLE 13.--ENGINEERING PROPERTIES AND CLASSIFICATIONS

[The symbol < means less than. Absence of an entry means data were not estimated]

Soil name and map symbol	Depth	USDA texture	Classification		Percentage passing sieve number--			Liquid limit	Plasticity index
			Unified	AASHTO	10	40	200		
	In							Pct	
1----------------- Acy	0-5	Silt loam--------	ML, CL-ML	A-4	100	95-100	90-100	<32	*NP-7
	5-26	Silty clay loam	CL	A-6, A-7-6	90-100	85-100	75-100	31-45	11-22
	26-60	Silt loam, silty clay loam.	CL, CL-ML	A-6	90-100	85-100	75-100	20-36	5-15
2----------------- Baldwin	0-7	Silty clay loam	CL, CH	A-7-6, A-6	100	100	95-100	35-55	15-28
	7-41	Clay, silty clay	CH	A-7-6	95-100	95-100	90-100	51-75	25-45
	41-60	Loam, silt loam, very fine sandy loam.	CL, CL-ML	A-7-6, A-6, A-4	95-100	95-100	90-100	26-35	5-15
3----------------- Basile	0-24	Silt loam--------	ML, CL, CL-ML	A-4	100	90-100	75-95	<30	NP-10
	24-50	Silty clay loam	CL	A-6, A-7-6	100	95-100	80-95	30-42	12-20
	50-60	Silt loam, silty clay loam.	CL	A-6, A-4, A-7-6	100	95-100	80-95	28-42	8-20
4**:									
Coteau-------------	0-7	Silt loam--------	ML, CL-ML	A-4	100	100	95-100	<27	NP-7
	7-16	Silty clay loam, silt loam.	CL	A-6	100	100	95-100	33-40	12-18
	16-60	Silt loam--------	CL-ML, CL	A-4, A-6	100	100	95-100	25-37	5-15
Frost--------------	0-25	Silt loam--------	CL-ML, CL	A-4	100	100	80-100	25-31	5-10
	25-60	Silty clay loam, silt loam.	CL	A-6, A-7-6	100	100	90-100	35-50	15-25
5----------------- Coteau	0-8	Silt loam--------	ML, CL-ML	A-4	100	100	95-100	<27	NP-7
	8-57	Silty clay loam, silt loam.	CL	A-6	100	100	95-100	33-40	12-18
	57-72	Silt loam--------	CL-ML, CL	A-4, A-6	100	100	95-100	25-37	5-15
6----------------- Coteau	0-5	Silt loam--------	ML, CL-ML	A-4	100	100	95-100	<27	NP-7
	5-29	Silty clay loam, silt loam.	CL	A-6	100	100	95-100	33-40	12-18
	29-60	Silt loam--------	CL-ML, CL	A-4, A-6	100	100	95-100	25-37	5-15
7----------------- Crowley	0-14	Silt loam--------	ML, CL-ML, CL	A-4	100	95-100	80-100	<30	NP-10
	14-46	Silty clay, silty clay loam.	CH, CL	A-7-6	100	95-100	85-100	41-60	20-35
	46-75	Silty clay loam, silty clay.	CL, CH	A-7-6, A-6	100	95-100	85-100	38-60	18-35
8**--------------- Fausse	0-7	Clay------------	CH, OH, MH	A-7-6, A-7-5	100	100	95-100	60-100	30-65
	7-60	Clay------------	CH, MH	A-7-6, A-7-5	100	100	95-100	60-105	30-73
9----------------- Frost	0-14	Silt loam--------	CL-ML, CL	A-4	100	100	80-100	25-31	5-10
	14-60	Silty clay loam, silt loam.	CL	A-6, A-7-6	100	100	90-100	35-50	15-25
10---------------- Frost	0-25	Silt loam--------	CL-ML, CL	A-4	100	100	80-100	25-31	5-10
	25-60	Silty clay loam, silt loam.	CL	A-6, A-7-6	100	100	90-100	35-50	15-25

See footnote at end of table.

TABLE 13.--ENGINEERING PROPERTIES AND CLASSIFICATIONS--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Percentage passing sieve number--			Liquid limit	Plas-ticity index
			Unified	AASHTO	10	40	200		
	In							Pct	
11---------------- Gallion	0-7	Silt loam--------	ML, CL-ML, CL	A-4, A-6	100	100	90-100	<28	NP-11
	7-19	Silty clay loam	CL	A-6	100	100	90-100	28-40	11-17
	19-60	Stratified silty clay loam to very fine sandy loam.	CL, CL-ML	A-6, A-4	100	100	90-100	23-34	4-12
12---------------- Iberia	0-14	Silty clay-------	CH, CL, MH	A-7-6, A-7-5	100	100	95-100	45-88	22-52
	14-47	Clay, silty clay	CH, MH	A-7-6, A-7-5	90-100	90-100	85-100	58-88	32-52
	47-77	Silty clay, silty clay loam, clay.	CH, CL, MH	A-7-6, A-7-5	100	100	95-100	41-88	17-52
13---------------- Jeanerette	0-9	Silt loam--------	CL-ML, CL	A-4	100	95-100	90-100	23-31	4-10
	9-33	Silty clay loam	CL	A-6, A-7-6	85-100	80-95	80-95	32-48	11-24
	33-60	Silt loam, loam, silty clay loam.	CL, CL-ML	A-6, A-4	90-100	85-100	85-100	23-40	4-17
17---------------- Memphis	0-8	Silt loam--------	ML, CL-ML, CL	A-4	100	100	90-100	<30	NP-10
	8-32	Silt loam, silty clay loam.	CL	A-6, A-7	100	100	90-100	35-48	15-25
	32-82	Silt loam--------	ML, CL	A-4, A-6	100	100	90-100	30-40	6-15
18---------------- Memphis	0-6	Silt loam--------	ML, CL-ML, CL	A-4	100	100	90-100	<30	NP-10
	6-36	Silt loam, silty clay loam.	CL	A-6, A-7	100	100	90-100	35-48	15-25
	36-64	Silt loam--------	ML, CL	A-4, A-6	100	100	90-100	30-40	6-15
19---------------- Memphis	0-4	Silt loam--------	ML, CL-ML, CL	A-4	100	100	90-100	<30	NP-10
	4-46	Silt loam, silty clay loam.	CL	A-6, A-7	100	100	90-100	35-48	15-25
	46-60	Silt loam--------	ML, CL	A-4, A-6	100	100	90-100	30-40	6-15
21---------------- Judice	0-6	Silty clay loam	CL, CH	A-7-6, A-6	100	100	95-100	47-58	22-30
	6-60	Silty clay, silty clay loam, clay loam.	CH, CL A-7-5	A-7-6, A-7-5	95-100	90-100	75-100	60-80	32-48
22**: Mowata------------	0-17	Silt loam--------	ML, CL-ML, CL	A-4	100	100	90-100	22-30	2-10
	17-42	Silty clay loam, silty clay.	CL, CH	A-7-6, A-6	100	100	90-100	41-60	22-37
	42-60	Silty clay loam, silty clay.	CL	A-7-6, A-6	100	100	90-100	37-49	18-29

See footnote at end of table.

TABLE 13.--ENGINEERING PROPERTIES AND CLASSIFICATIONS--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Percentage passing sieve number--			Liquid limit	Plasticity index
			Unified	AASHTO	10	40	200		
	In							Pct	
22**:									
Frost	0-11	Silt loam	CL-ML, CL	A-4	100	100	80-100	25-31	5-10
	11-60	Silty clay loam, silt loam.	CL	A-6, A-7-6	100	100	90-100	35-50	15-25
23 Patoutville	0-10	Silt loam	ML, CL-ML	A-4	100	100	95-100	<28	NP-7
	10-32	Silty clay loam	CL	A-6, A-7-6	100	100	95-100	30-50	13-25
	32-60	Silty clay loam, silt loam.	CL	A-6, A-7-6, A-4	100	100	95-100	25-49	8-23
24 Sharkey	0-8	Clay	CH, CL	A-7-6	100	100	95-100	46-85	22-50
	8-45	Clay	CH	A-7-6	100	100	95-100	56-85	30-50
	45-60	Clay, silty clay loam, silt loam.	CL-ML, CL, CH	A-4, A-6, A-7-6	100	100	95-100	25-85	5-50
25 Sharkey	0-3	Clay	CH, CL	A-7-6	100	100	95-100	46-85	22-50
	3-46	Clay	CH	A-7-6	100	100	95-100	56-85	30-50
	46-60	Clay, silty clay loam, silt loam.	CL-ML, CL, CH	A-4, A-6, A-7-6	100	100	95-100	25-85	5-50

*NP means nonplastic.
**See map unit description for the composition and behavior of the map unit.

TABLE 14.--PHYSICAL AND CHEMICAL PROPERTIES OF SOILS

[The symbol < means less than. Absence of an entry means data were not estimated]

Soil name and map symbol	Depth	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
	In	In/hr	In/in	pH			
1 Acy	0-5	0.6-2.0	0.21-0.23	5.1-7.8	Low	High	Low.
	5-26	0.2-0.6	0.20-0.22	5.6-8.4	Moderate	High	Low.
	26-60	0.2-0.6	0.20-0.22	6.6-8.4	Low	High	Low.
2 Baldwin	0-7	0.06-0.2	0.18-0.22	5.6-6.5	Moderate	High	Moderate.
	7-41	<0.06	0.17-0.20	5.6-6.5	Very high	High	Moderate.
	41-60	<0.2	0.17-0.21	6.6-8.4	High	High	Low.
3 Basile	0-24	0.6-2.0	0.18-0.20	5.1-6.0	Low	High	Moderate.
	24-50	0.06-0.2	0.20-0.22	5.6-8.4	Moderate	High	Low.
	50-60	0.06-0.2	0.18-0.20	6.1-8.4	Low	High	Low.
4*:							
Coteau	0-7	0.2-0.6	0.21-0.23	5.1-6.5	Low	High	Moderate.
	7-16	0.2-0.6	0.20-0.23	5.1-6.5	Moderate	High	Moderate.
	16-60	0.2-0.6	0.20-0.23	5.1-7.3	Low	High	Moderate.
Frost	0-25	0.2-0.6	0.21-0.23	4.5-6.5	Low	High	Moderate.
	25-60	0.06-0.2	0.20-0.22	4.5-7.3	Moderate	High	Low.
5 Coteau	0-8	0.2-0.6	0.21-0.23	5.1-6.5	Low	High	Moderate.
	8-57	0.2-0.6	0.20-0.23	5.1-6.5	Moderate	High	Moderate.
	57-72	0.2-0.6	0.20-0.23	5.1-7.3	Low	High	Moderate.
6 Coteau	0-5	0.2-0.6	0.21-0.23	5.1-6.5	Low	High	Moderate.
	5-29	0.2-0.6	0.20-0.23	5.1-6.5	Moderate	High	Moderate.
	29-60	0.2-0.6	0.20-0.23	5.1-7.3	Low	High	Moderate.
7 Crowley	0-14	0.2-0.6	0.20-0.23	5.6-8.4	Low	High	Moderate.
	14-46	<0.06	0.19-0.21	5.1-6.5	High	High	Moderate.
	46-75	0.06-0.2	0.20-0.22	6.1-8.4	Moderate	High	Moderate.
8* Fausse	0-7	<0.06	0.18-0.20	5.6-7.3	Very high	High	Low.
	7-60	<0.06	0.18-0.20	6.6-8.4	Very high	High	Low.
9 Frost	0-12	0.2-0.6	0.21-0.23	4.5-6.5	Low	High	Moderate.
	12-65	0.06-0.2	0.20-0.22	4.5-7.3	Moderate	High	Low.
10 Frost	0-25	0.2-0.6	0.21-0.23	4.5-6.5	Low	High	Moderate.
	25-60	0.06-0.2	0.20-0.22	4.5-7.3	Moderate	High	Low.
11 Gallion	0-7	0.6-2.0	0.21-0.23	5.6-7.3	Low	Low	Low.
	7-19	0.6-2.0	0.20-0.22	5.6-7.8	Moderate	Moderate	Low.
	19-60	0.6-2.0	0.20-0.23	6.1-8.4	Low	Low	Low.
12 Iberia	0-14	0.06-0.2	0.15-0.19	6.1-7.8	Very high	High	Low.
	14-47	<0.06	0.14-0.18	6.6-8.4	Very high	High	Low.
	47-77	<0.2	0.14-0.20	6.6-8.4	High	High	Low.
13 Jeanerette	0-9	0.6-2.0	0.21-0.23	5.6-7.8	Low	High	Low.
	9-33	0.2-0.6	0.20-0.22	6.6-8.4	Moderate	High	Low.
	33-60	0.2-0.6	0.20-0.23	6.6-8.4	Moderate	High	Low.
17 Memphis	0-8	0.6-2.0	0.20-0.23	4.5-6.0	Low	Low	Moderate.
	8-32	0.6-2.0	0.20-0.22	4.5-6.0	Low	Moderate	Moderate.
	32-82	0.6-2.0	0.20-0.23	4.5-6.0	Low	Low	Moderate.
18 Memphis	0-6	0.6-2.0	0.20-0.23	4.5-6.0	Low	Low	Moderate.
	6-36	0.6-2.0	0.20-0.22	4.5-6.0	Low	Moderate	Moderate.
	36-64	0.6-2.0	0.20-0.23	4.5-6.0	Low	Low	Moderate.

See footnote at end of table.

TABLE 14.--PHYSICAL AND CHEMICAL PROPERTIES OF SOILS--Continued

Soil name and map symbol	Depth	Permea-bility	Available water capacity	Soil reaction	Shrink-swell potential	Risk of corrosion	
						Uncoated steel	Concrete
	In	In/hr	In/in	pH			
19 Memphis	0-4	0.6-2.0	0.20-0.23	4.5-6.0	Low	Low	Moderate.
	4-46	0.6-2.0	0.20-0.22	4.5-6.0	Low	Moderate	Moderate.
	46-60	0.6-2.0	0.20-0.23	4.5-6.0	Low	Low	Moderate.
21 Judice	0-6	0.06-0.2	0.17-0.22	5.6-8.4	High	High	Low.
	6-60	<0.06	0.15-0.19	6.1-8.4	High	High	Low.
22*:							
Mowata	0-17	0.2-0.6	0.21-0.23	5.6-7.3	Low	High	Low.
	17-42	<0.06	0.18-0.20	5.1-8.4	High	High	Low.
	42-60	<0.06	0.18-0.20	7.4-8.4	High	High	Low.
Frost	0-11	0.2-0.6	0.21-0.23	4.5-6.5	Low	High	Moderate.
	11-60	0.06-0.2	0.20-0.22	4.5-7.3	Moderate	High	Low.
23 Patoutville	0-10	0.2-0.6	0.20-0.23	4.5-6.5	Low	High	Moderate.
	10-32	0.06-0.2	0.20-0.22	5.1-7.3	Moderate	High	Moderate.
	32-60	0.06-0.6	0.20-0.22	6.1-8.4	Moderate	High	Low.
24 Sharkey	0-8	<0.06	0.18-0.20	6.1-8.4	Very high	High	Low.
	8-45	<0.06	0.18-0.20	7.4-8.4	Very high	High	Low.
	45-60	0.06-0.2	0.18-0.22	7.4-8.4	Very high	High	Low.
25 Sharkey	0-3	<0.06	0.18-0.20	6.1-8.4	Very high	High	Low.
	3-45	<0.06	0.18-0.20	7.4-8.4	Very high	High	Low.
	45-60	0.06-0.2	0.18-0.22	7.4-8.4	Very high	High	Low.

* See map unit description for the composition and behavior of the map unit.

TABLE 15.--ENGINEERING TEST DATA

[Tests performed by the Louisiana Department of Highways, in cooperation with the Bureau of Public Roads, U.S. Department of Commerce, in accordance with standard procedures of the American Association of State Highway and Transportation Officials (AASHTO) (1)]

Soil name and location	Parent material	Laboratory number	Depth from surface	Moisture density[1]: Maximum dry density	Moisture density[1]: Optimum moisture	Mechanical analyses[2]: Percentage passing sieve: No. 10	No. 40	No. 200	Percentage smaller than: 0.05 mm	0.02 mm	0.005 mm	0.002 mm	Liquid limit	Plasticity index	Classification: AASHTO	Unified
			In	Lbs per cu ft	Pct											
Acy silt loam: SLG sec. 65, T. 9 S., R. 5 E.	Loess	209-649	0-5	97.1	22.7	100	98	97	97	50	16	12	31	4	A-4(8)	ML
		209-650	5-16	97.8	22.3	100	99	98	98	70	40	34	40	17	A-6(11)	CL
Coteau silt loam: NE1/4NE1/4 sec. 31, T. 10 S., R. 5 E.	Loess	209-642	0-8	100.3	20.8	100	99	98	97	52	15	11	26	1	A-4(8)	ML
		209-643	8-15	101.0	20.5	100	100	99	99	64	33	28	34	12	A-6(8)	CL
		209-644	30-50	99.6	21.1	100	100	100	100	63	31	26	38	15	A-6(10)	CL
Judice silty clay loam: SW1/4SE1/4 sec. 16, T. 10 S., R. 3 E.	Clayey alluvium	224-882	0-6	91.3	26.2	100	100	99	98	84	46	39	55	26	A-7-6(17)	CH
		224-883	6-17	94.4	24.6	100	100	100	99	84	55	45	66	39	A-7-6(20)	CH
		224-884	17-38	99.7	21.0	100	100	100	99	84	58	49	75	48	A-7-6(20)	CH
		224-885	38-60	93.6	25.7	100	100	100	99	86	59	50	63	32	A-7-5(20)	CH
Patoutville silt loam: SW1/4SE1/4 sec. 36, T. 9 S., R. 3 E.	Loess	209-660	0-4	97.1	22.7	100	100	98	90	48	14	9	---	NP	A-4(8)	ML
		209-661	10-20	96.2	23.2	100	100	98	95	67	38	32	46	22	A-7-6(14)	CL

1/Based on AASHTO Designation: T 99-57, Method A (1).

2/Mechanical analysis according to AASHTO Designation T 88-57 (1). Results by this procedure may differ somewhat from results obtained by the soil survey procedure of the Soil Conservation Service (SCS). In the AASHTO procedure, the fine material is analyzed by the hydrometer method and the various grain-sized fractions are calculated on the basis of all the material, including that coarser than 2 millimeters in diameter. In the SCS soil survey procedure, the fine material is analyzed by the pipette method and the material coarser than 2 millimeters in diameter is excluded from calculations of grain-sized fractions. The mechanical analysis data used in this table are not suitable for naming textural classes for soils.

TABLE 16.--CLASSIFICATION OF THE SOILS

[An asterisk in the first column indicates a taxadjunct to the series. The soils in Sharkey clay (map unit 24) are taxadjuncts to the series, but the soils in Sharkey clay, frequently flooded (map unit 25) are within the range of the Sharkey series. See text for a description of those characteristics of these taxadjuncts that are outside the range of the series]

Soil name	Family or higher taxonomic class
Acy	Fine-silty, mixed, thermic Aeric Ochraqualfs
Baldwin	Fine, montmorillonitic, thermic Vertic Ochraqualfs
Basile	Fine-silty, mixed, thermic Typic Glossaqualfs
Coteau	Fine-silty, mixed, thermic Glossaquic Hapludalfs
Crowley	Fine, montmorillonitic, thermic Typic Albaqualfs
Fausse	Very-fine, montmorillonitic, nonacid, thermic Typic Fluvaquents
Frost	Fine-silty, mixed, thermic Typic Glossaqualfs
Gallion	Fine-silty, mixed, thermic Typic Hapludalfs
*Iberia	Fine, montmorillonitic, thermic Vertic Haplaquolls
Jeanerette	Fine-silty, mixed, thermic Typic Argiaquolls
Judice	Fine, montmorillonitic, thermic Vertic Haplaquolls
Memphis	Fine-silty, mixed, thermic Typic Hapludalfs
Mowata	Fine, montmorillonitic, thermic Typic Glossaqualfs
Patoutville	Fine-silty, mixed, thermic Aeric Ochraqualfs
*Sharkey	Very-fine, montmorillonitic, nonacid, thermic Vertic Haplaquepts

TABLE 17.--RELATIONSHIPS BETWEEN SOILS AND TOPOGRAPHY, RUNOFF, DRAINAGE, AND WATER TABLE

Soil series grouped by parent material	Topography	Runoff	Internal drainage class	Seasonal high water table	
				Depth	Duration
				Feet	
Soils that formed in loess:					
Acy	Nearly level	Slow	Somewhat poorly drained.	1.5-2.5	Dec.-Apr.
Coteau	Gently sloping	Slow and medium	Somewhat poorly drained.	1.5-3.0	Dec.-Apr.
Frost	Level and depressional.	Slow and very slow.	Poorly drained	0.0-1.5	Dec.-Apr.
Jeanerette	Level and nearly level.	Slow	Somewhat poorly drained.	1.0-2.5	Dec.-Apr.
Memphis	Nearly level to moderately sloping.	Medium and rapid.	Well drained	>6.0	Jan.-Dec.
Patoutville	Nearly level	Slow	Somewhat poorly drained.	2.0-3.0	Dec.-May
Soils that formed in Mississippi River alluvium:					
Baldwin	Nearly level	Slow	Poorly drained	0.0-2.0	Dec.-Mar.
Fausse	Depressional	Very slow and ponded.	Very poorly drained.	+0.5-1.5	Jan.-Dec.
Iberia	Level	Slow and very slow.	Poorly drained	0.0-2.0	Dec.-Apr.
Sharkey	Level	Slow and very slow.	Poorly drained	0.0-2.0	Dec.-Apr.
Soils that formed in Red River alluvium:					
Gallion	Nearly level	Slow	Well drained	>6.0	Jan.-Dec.
Soils that formed dominantly in the Prairie Formation sediments:					
Basile	Level	Slow	Poorly drained	0.0-1.5	Dec.-Apr.
Crowley	Nearly level	Slow	Somewhat poorly drained.	0.5-1.5	Dec.-Apr.
Judice	Level and depressional.	Very slow	Poorly drained	0.0-2.0	Dec.-Apr.
Mowata	Level and depressional.	Very slow	Poorly drained	0.0-2.0	Dec.-Apr.

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